

## CHAPTER VIII

### THE ENVIRONMENTAL PROTECTION REGIME

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At the turn of the new millennium, the capacity of the Colombian State to protect the environment has been identified by several studies as one of the strongest in Latin America and the Caribbean (Rodríguez B. and Espinoza, 2002; Bárcena *et al.*, 2001; Brañes, 2001; Quiroga, 2001; WB, 2000). In particular, it has been recognized that Colombia has been one of the countries in the region which have given the strongest response to the agreements reached at the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992, which is known to be one of the major milestones in the configuration of global environmentalism. Indeed, since the nineties decade, Colombia strengthened its environmental institutions and policies, beginning with the institutional reform carried out between 1990 and 1993, which has borne positive consequences for the protection of the natural environment.

Table 8.1. presents in a synthetic manner the major advances of environmental management during the 1990-2002 period, with some illustrative examples. Environmental management is understood in this essay as the aggregate of the actions taken by a society to protect the environment, that is to say, it is considered to transcend State action, and moreover, diverse organizations from civil society and the productive sector should act proactively in furtherance of this public good. Nevertheless, the present article focuses on State achievements in the sphere of environmental management, and makes very little reference to the positive developments or the significant contributions of the civil society organizations that work in the field of environmental protection.

The process of strengthening environmental management, developed since 1990, has been outstanding because it coincided with a period of intensification in the armed conflict which has struck the country for over four decades. This would pose an exceptional example at the global level, because in countries which have lived armed conflicts similar to the Colombian one, environmental management has been weakened, as evinced by the recent Latin American experiences (El Salvador, Guatemala, Nicaragua and Peru) and by the events that have taken place in Africa (Angola, Rwanda, Congo).

<b>Table 8.1. Advances in environmental management, 1990-2002</b>
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1. Constitutionalization of environmental issues: nearly 60 articles in the 1991
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Constitution refer to environmental protection and sustainable development.
2. Adoption of Law 99 of 1993, which created the Ministry of the Environment and the National Environmental System ( <i>Sistema Nacional Ambiental</i> ), among other provisions. Approval of new legislation and updating of the existing norms and regulations, in development of the Constitution, Law 99 of 1993 and the Code of Natural Resources and the Environment (this last framework law, issued in 1974, was the first environmental legislation to be drafted as a Code in the world).
3. Granting of a higher hierarchy to environmental authorities within the Public Administration, with the creation of the Ministry of the Environment in 1993. In 2003, this Ministry was tasked with the additional functions of freshwater supply, basic sanitation, housing and territorial development, which had been under the responsibility of the Ministry of Development, that was suppressed. The functionality of the new Ministry of Environment, Housing and Territorial Development for the fulfillment of its environmental duties has been the object of controversy since the moment in which the Decree that created it was issued (Decree 2016 of 2003).
4. New forms of decentralization and autonomy for regional environmental management, through the Regional Autonomous Corporations ( <i>Corporaciones Autónomas Regionales - CARs</i> ), a system of 34 environmental authorities which, for its features, is unique in Latin America and the Caribbean.
5. Establishment of five environmental research institutes, which depend on the Ministry and on the Colombian System of Environmental Information ( <i>Sistema de Información Ambiental de Colombia</i> ).
6. A higher hierarchy for environmental issues in governmental policies, and advances in the formulation of environmental policies. Twenty eight environmental policies have been approved by the Council on Economic and Social Policy ( <i>Consejo de Política Económica y Social</i> ) or by the National Environmental Council ( <i>Consejo Nacional Ambiental</i> ) (MMA, 1999; MMA, 2002a).
7. Broadening of the environmental agenda, particularly in relation to the agreements reached at the Earth Summit. Among them one should mention: biodiversity and sustainable management of forests, climate change, desertification, bio-security, land-based sources of marine pollution and persistent organic pollutants (POPs).
8. Updating of the existing policy instruments, which were based on command and control. Development of territorial organization plans ( <i>planes de ordenamiento territorial</i> ) in over 60% of the country's municipalities.
9. Introduction of new economic instruments and update of the existing ones. A water pollution charge system is one of the best examples in the world of the potential of applying economic instruments in developing countries (WB, 2000; CEPA-PNUMA-SEMARNA, 1998).
10. Introduction of new management instruments. In particular: (i) 35 voluntary agreements for cleaner production with critical industrial sectors, signed since 1996; (ii) the technical assistance program for small and medium industries in Bogotá and the main industrial centers (MMA, 2002a).
11. Granting, or clarification of, property titles over critical environmental assets. In particular, recognition of the rights of indigenous and Afro-Colombian communities over the lands they have ancestrally occupied. These lands, transformed into the collective property of ethnic minorities, represent nowadays almost 35% of the country's mainland

<p>area, and host a large part of the forest ecosystems in an adequate state of conservation. The Colombian legislation on ethnic minorities is one of the most progressive in Latin America and the Caribbean (MIC: 1998).</p>
<p>12. Deployment of diverse mechanisms for the participation of civil society and the private sector in environmental management (e.g. public hearings for the concession of environmental licenses; representation of civil society in the boards of directors of the Regional Autonomous Corporations (CARs). The <i>acción de tutela</i> and <i>acción popular</i> figures established in the Constitution became fundamental tools for the defense of citizens' right to a healthy environment.</p>
<p>13. Strengthening of civil society and private sector organizations which are proactive in the field of environmental protection. Among them, I mention those entities which have been created to foment such organizations: Ecofondo, the Fund for Environmental Action (<i>Fondo para la Acción Ambiental</i>), the Colombian Center for Sustainable Business Development (<i>Centro Colombiano para el Desarrollo Empresarial Sostenible, Cecodes</i>).</p>
<p>14. Incorporation of new organizational models and instruments aimed at achieving a higher integration of the environmental dimension into the policy of different sectors. Among others, one should mention the National Environmental Council (<i>Consejo Nacional Ambiental</i>) and the Environmental Unit at the National Roadways Institute (<i>Instituto Nacional de Vías</i>).</p>
<p>15. Strengthening of the Colombian insertion into international environmental politics. High-profile Colombian participation in international negotiations: (i) presidency of the negotiations that led to the adoption of the Biosecurity Protocol; (ii) presidencies of the Commission on Sustainable Development and the Intergovernmental Panel on Forests.</p>
<p>16. Deployment of mechanisms to ensure self-financing of environmental management by the Regional Autonomous Corporations (CARs), and provision of resources for territorial entities. One of the most salient examples of environmental management finance in Latin America.</p>

Source: Based on Rodríguez B. (2003) and (2002).

This essay is focused on some of the aspects of public environmental management which have differentiated Colombia most markedly from the other countries in Latin America and the Caribbean during the last decade. In particular, the following points are considered: (i) the effects of the incorporation of environmental issues into the Constitution; (ii) the capacity for the formulation of environmental policies at the national and sub-national levels; (iii) the increase in the knowledge about the environment and in access to information about its state; (iv) the existence of a decentralized and autonomous regional system of environmental management; and (v) the self-finance of a substantial part of environmental management, on the grounds of diverse economic instruments established for the purpose. Finally, reference will be made to the positive impacts that the advances achieved in the field of environmental management have borne upon the environment, because such impact actually constitutes the purpose and ultimate justification of the institutional efforts and policies undertaken during the last decade. For readers who are not accustomed to environmental affairs, I have attached an Annex that attempts to answer the question: where is Colombia located at the global level in relation

to its ecological sustainability? – a necessary reference framework to guide the considerations that follow.

### **Strengths of environmental institutions and policies in Colombia**

The relative strength of environmental management in Colombia, when compared to most of the countries in the region, has been the product of a continuous and sustained process of construction of regulations, policies and governmental and non-governmental organizations, which has taken place especially during the last three decades – although important antecedents can be identified in the period that ran from 1950 until 1974. Here it is necessary to briefly point out some of the milestones in the genesis of environmental management in Colombia, as a requisite framework for achieving a better understanding of its distinctive strengths.

#### *From Stockholm to Rio: historical antecedents of environmental management in Colombia*

Modern environmental management was initiated in 1974 with the adoption of the Code of Renewable Natural Resources and the Environment, an event that placed the subject on a relatively high standing in the context of Colombian legal institutions, when environmentalism was only beginning to emerge in the country and the region. This was the first General Law on the Environment in Latin America and the Caribbean, and it would be followed, among others, by those of Venezuela, Brazil, Peru, Mexico, Chile and Costa Rica, issued in the years 1976, 1981, 1986, 1990, 1994 and 1995, respectively (Brañes, 2001).

The adoption of the Code in 1974 was the main Colombian response to the Stockholm Conference on the Human Environment, held in 1972, a fundamental precedent for the creation of environmentalism at the global, regional and national levels. Indeed, in Latin America and the Caribbean, like in other regions of the globe, this conference and its agreements furthered a vision by which the State must play a critical role in environmental protection, and they favored the creation of spaces for the participation of NGOs in defense of the environment. Shortly thereafter, in 1976, the National Institute for the Development of Renewable Natural Resources (*Instituto Nacional de Desarrollo de los Recursos Naturales Renovables – Inderena*), created six years before, was reformed in order to become the first environmental authority of the country, and adapt itself to the new imperatives of the Code. The newly christened INDERENA, Institute of Renewable Natural Resources and the Environment, was established as a centralized institution with jurisdiction over the entire national territory. Among the main legacies of the INDERENA, which was suppressed in 1993 with the creation of the Ministry of the Environment, one can identify: its central participation in the adoption of the Code, the setting in motion of the first national environmental policies in the framework of the new

legislation –including those that corresponded to the green, blue and brown agendas-, and the creation of a system of protected areas (Rodríguez B., 1998).

Before 1974 there were important historical antecedents of environmental management, at the national and sub-national levels, to which reference is necessary in order to build a better comprehension of the current structure of the Colombian public entities. In 1954, the Regional Autonomous Corporation of the Cauca Valley (*Corporación Autónoma Regional del Valle del Cauca – CVC*) was created, adopting the model of the Tennessee Valley Authority (TVA), centered on the management of the high basin of the Cauca river, with the purpose of making multipurpose use of its waters –including the generation of electricity, irrigation and flood control-, and on the consequent administration of all renewable natural resources associated with the watershed. During the 1961-1973 period, six new autonomous regional corporations were progressively created, for purposes related to regional development and to the administration and preservation of renewable natural resources. With the adoption of the Code in 1974, they were partially or totally entrusted duties as environmental authorities in their area of jurisdiction. One of those entities, the Corporation of the Magdalena and Sinú Valleys, was merged with the Natural Resources division of the Ministry of Agriculture to create the INDERENA. Since that date and until 1988, 12 new corporations were created, and ultimately they replaced the INDERENA as environmental authorities in several regions of the country, up to the point of covering nearly 25% of the national territory. In addition, CARs received several mandates in matters of regional development (especially for the construction of certain infrastructure works and the realization of projects aimed at solving specific problems of their regions); but none received the mandate of generating electricity, a duty that would be held by the CVC until the 1993 environmental reform.

The CVC, as well as the corporations founded during the seventies, were compelled to change the approaches inspired on the Tennessee Valley Authority, as a consequence of the criticisms that they received from environmentalists at the international level and also in Colombia. These approaches were centered on conservation as an instrument to secure efficient and rational use of resources, but they frequently led to the deterioration of ecosystems. This was proven, for example, by the perverse effects caused by the construction of dams on the ecosystem, including the destruction or degradation of wetlands (Hays, 1998). The Corporations gradually became aligned with the environmentalism of the seventies, which began to replace utilitarian conservation of nature, and which meant in practice the setting in motion of the Code of Renewable Natural Resources and the Environment.

Additionally, as the country advanced in the decentralization of Public Administration in departments and municipalities -a process that gained special force in the eighties decade-, CARs had to give up their responsibilities in the area of development so that said territorial entities could exercise them. This way, CARs became more specialized in their functions as environmental authorities, and at the same time they stopped playing the simultaneous roles of “judge and party”, which was frequently detrimental for environmental protection. CARs have not been exempted from controversy around their

effectiveness and efficiency at the national level. But as I shall argue further ahead, given their structure and achievements, they are a relevant example of environmental management at the sub-national level, and within the group of Latin American and Caribbean countries – an asset which has not been duly valued in Colombia.

Seventeen years after the adoption of the Code, Colombia strengthened its environmental regulations through the 1991 Constitution, which incorporated almost 60 articles on the environment and sustainable development, and through Law 99 of 1993, which created the Ministry of the Environment, the National Environmental System (*Sistema Nacional Ambiental* - SINA), and adopted other provisions. Among them, one should mention the reform of the 18 pre-existing Regional Autonomous Corporations, and the creation of 15 new such entities to replace the INDERENA (which amounted to 75% of the country), as well as their transformation into the highest environmental authorities at the regional level.

Both the constitutionalization of environmental issues and Law 99 of 1993 were the main responses given by Colombia to the commitments undertaken at the Conference on Environment and Development held in Rio de Janeiro in 1992. But they also responded to a process initiated three years before, in which the weaknesses and failures of the national and regional public entities in charge of environmental management were identified – these entities had produced significant results during the foregoing decades, but were no longer enough to address the diverse local and global challenges. In addition, this reform was framed within a group of institutional transformations implemented since the beginning of the nineties decade, within a spirit of great optimism which was generated in the country by the economical and political expectations of the time, and which led, *inter alia*, to the adoption of a new Constitution.

The three cornerstone provisions of the Colombian environmental legislation have been underscored by different scholars for their comprehensive and coherent nature, as compared to the ones that exist in other countries of the region (Brañes, 2001). As it has been pointed out, “the relevance of Law 99 of 1993 is no lesser than that of a General Law on the Environment” (Id., p. 70). This legal virtuosity in the environmental field could surely be associated to the great capacity that our society has proven to have for the elaboration of codes and laws. In the case at hand, one should emphasize that the processes of adoption of the Code of Natural Resources and the Environment, of the environmental provisions of the 1991 Constitution and of Law 99 of 1993, were surrounded by exceptionally favorable historical circumstances, which can explain their renowned quality and pertinence. Indeed, these three instruments were posed as an answer to problems which had been identified through careful diagnoses of the state of environmental institutions in the country, and to the imperatives generated at the international level by the global environmental threats; they were the product of broad popular consultations; they were motivated by the pursuit of ambitious environmental and social goals, and their formulation was made by teams of experts with well-known national trajectories, and with the participation of reputable international jurists.

There have been no great ruptures or discontinuities in the history of environmental management in Colombia. This is one of the facts that explain its relative strength, when compared to the other countries in Latin America and the Caribbean. Ruptures, discontinuities and the weakening of environmental management were very common in the countries that were ruled by military dictatorships during the seventies and eighties, which regarded environmentalism as a “subversive force”. From the authoritarian and illegitimate perspective of these regimes, such appreciations were not that far from reality; some of the pioneering environmental NGOs established in these countries during the period directed their attention to the relations between development, environment and justice, and they became instruments in the fight against dictatorship. In sum, in a high number of countries in Latin America and the Caribbean, the emergence and evolution of governmental and non-governmental organizations in the environmental field were marked -and, to a great extent, blocked- by the existence of authoritarian regimes, as was the case in Argentina, Brazil, Chile and Paraguay (Léna, 2001; Silva, 1997). In contrast, the governmental authorities of some countries that enjoyed democratic regimes actually promoted environmental NGOs, and vice-versa, NGOs bore a great influence upon the conformation of public environmental institutions, as happened in Colombia and Venezuela since the beginnings of the seventies, and in Brazil, once democracy was restored.

#### *Positive consequences of the constitutionalization of environmental protection*

During the nineties decade Colombia, like 18 other countries in Latin America, enshrined environmental issues in the Constitution. However, this fact has borne more positive consequences in Colombia than in most of those other countries, as was evinced in a seminar on the matter organized by UNEP (Martínez, 2000). The 1991 Constitution has been named a “Green Political Charter”, given that it includes more than sixty provisions referred to environmental protection. The effective use which has been made of the *acción de tutela* and *acción popular* as instruments in the defense of citizens’ constitutional right to enjoy a healthy environment, is one of the main consequences of the constitutionalization of the environment (Jaramillo, 1998). But its effects are not restricted to these two judicial channels – they also relate to the progressive emergence of courts (the Constitutional Court, the Supreme Court of Justice, the Council of State) as key actors in the defense of the nation’s ecological heritage and in the protection of environmental institutions.

The environmental institutions created at the beginnings of the nineties have been the target of several attempts to weaken them, staged from the Executive and Legislative powers, and from some groups within the private sector. Such attempts, which counter the public interest, have been mostly dismantled due to the timely intervention of the three aforementioned Courts – which signals the very positive impact caused by the constitutionalization of environmental issues.

Attempts at undermining the environmental institutionality are inserted in the framework of the vision held by some (public and private) social groups, according to which certain

environmental regulations or measures constitute obstacles for the materialization of projects that carry along political, economic or social benefits in the short term, and the environmental damage that such projects can cause have little or no importance. This vision would explain why it is that the private sector tends to capture the environmental authorities for its own benefit, a behavior which has been observed in different countries -both developed and developing-, which seems to arise here with higher frequency and depth than in the other sectors of public activity (Janicke, 1998).

The history of environmental licenses is one of the best illustrations of attacks against environmental institutions by different interest groups, and of their defense by the Courts. Thus, for example, six months after the adoption of Law 99 of 1993, the Transportation Law incorporated the figure of “positive administrative silence” for cases in which the environmental authorities did not solve requests for environmental licenses within a given term. The Constitutional Court declared that such provision was unconstitutional, and in its judgment, it stated that a collective right –in this case the right of citizens to enjoy a healthy environment- could not be the object of administrative silences (Londoño, 1998).

#### *Environmental policies, establishment of priorities and participation*

The Ministry of the Environment, on the grounds of its legal powers, has displayed an intense activity in the formulation of environmental policies at the national level, and in the establishment and updating of new regulations. Environmental chapters were incorporated into the four National Development Plans adopted since 1994, complying with the mandates of the Constitution, by which Development Plans must include economic, social and ecological affairs as their three basic axes. The Ministry has adopted 28 environmental policies (on forests, biodiversity, climate change, cleaner production, etc.), which have been endorsed by the National Council on Economic and Social Policy (*Consejo Nacional de Política Económica y Social* – CONPES) or by the National Environmental Council, between 1994 and 2004.

To the above one must add the three-year plans of Autonomous Regional Corporations (CAR) and the ten-year regional environmental plans, as well as the four-year development plans of departments and municipalities, a considerable part of which has an environmental unit. In addition, mention should be made of the eco-regional planning processes led by the Ministry across the nation, as a basis for the establishment of priorities at the regional level.

The role played by the Ministry of the Environment in the process of formulation of the Municipal Land Use Plans, which was developed from 1997 until 2000, is also noteworthy. Such role was materialized in the guidelines and orientations that the Ministry gave to CARs in order for them to set in motion the powers invested upon them by the law to accompany municipalities in the elaboration of the Municipal Land Use Plans—*Planes de Ordenamiento Territorial, POTs*- (among them, the powers to adopt environmental criteria for the territorial organization of their jurisdiction, and to approve



the environmental component of the Plans). These Plans have already been adopted by 79% of Colombia's 1,099 municipalities (MAVDT, 2004). Likewise, the Ministry had to solve the appeals filed by municipalities against the decisions adopted by CARs, some of which had great complexity. The case of Bogotá is quite representative. The Regional Autonomous Corporation of Cundinamarca did not approve the Land Use Plan project for the country's capital in relation to the chapter on Northward expansion. The District Administration appealed before the Ministry but this entity, on the grounds of the recommendations of a commission of experts composed of urbanists and environmentalists, essentially ratified the decision of the CAR, in spite of popular and influential mayor Peñalosa's repeated interventions against said decision. Municipal Land Use Plans have a ten-year scope, and both their composition and their impact are yet to be evaluated. But it is evident that they are some of the instruments with the highest potential for environmental management -and in general for territorial governance- possessed by the country.

There is no other country in Latin America or the Caribbean with such a large number of environmental policies at the national and regional levels. In addition, there is no other sector in the country that displays such a high number of formally adopted and documented policies. Colombia is also placed as one of the countries in which it has been most persistently attempted to incorporate civil society and the productive sector into the formulation and implementation of these policies, through diverse participation mechanisms (Rodríguez B. and Espinoza, 2002). Even though all this indicates that the National Environmental System (SINA) has great planning capacity, only very partial assessments are available about the implementation and impact of the policies. But the hundreds of processes which have been advanced to date are useful for the highly difficult purpose of establishing priorities, and they constitute a channel through which thousands of Colombians, by way of participative processes, have come to know and better identify the environmental problems of their regions and localities, as well as their possible solutions.

#### *Better knowledge of the environment and access to information about its conditions*

The amount of knowledge and information about the environment that is available to public authorities and to citizens alike has significantly increased in the last years. To corroborate this statement it is enough to visit the websites of the Ministry of the Environment, the Institute of Hydrology, Meteorology and Environmental Affairs (*IDEAM*), the Research Institute on the Pacific Environment (*IIAP*), the Marine Research Institute (*INVEMAR*), the Research Institute on the Amazonia (*SINCHI*), and the Alexander von Humboldt Institute. This last institution's collection of publications on the investigations it has carried out in little less than a decade is an impressive testimony of the larger degree of knowledge we have nowadays on the country's biodiversity and its current state.

Firm steps have thus been taken to initiate a process of production and distribution of information which is fundamental for citizens to gain higher awareness of environmental

problems, and to demand accountability by the authorities in regards to their achievements, as well as for the latter to count on more solid bases for the establishment of environmental priorities and policies. Precisely, the base line on the state of natural resources and the environment –which was finalized in the year 2002 under the coordination of the IDEAM-, makes it possible to establish inter-temporal comparisons with the aim of knowing and quantifying the processes of environmental restoration or degradation. Hence there now exists an integrated set of indicators referred to fundamental aspects of the environment, which will be periodically produced, and which given their nature, will become a key instrument for the formulation of policies and for the public's information (SIAC, 2002). An assessment carried out in the year 2001 includes Colombia among the four Latin American countries that have advanced the most in the process of constructing comprehensive and quality indicators (Quiroga, 2001).

This increase in the availability and accessibility of environmental information came as a consequence of the creation of new research institutes. Ten years ago, the public system of environmental management only had one small institute of investigations on biodiversity, at the INDERENA. In contrast to this situation, with Law 99, five institutes were created or transformed, so as to form the scientific basis of the National Environmental System, SINA. The IDEAM, the Von Humboldt Institute (specialized on continental biodiversity), the Sinchi Institute (for the Amazonian region), the Research Institute on the Pacific Environment (specialized on the so-called biogeographic Chocó region), and INVEMAR (specialized on the coastal areas and the marine environment of the Pacific and Atlantic), nowadays produce impressive scientific results. All of these research institutes, except for the IDEAM, are private ~~civil~~ in nature, a modality designed for them to obtain finance for substantial part of their activities from sources other than the national budget. Results from this standpoint are satisfactory, as proven by the fact that taken as a whole, the institutes finance more than 50% of their research activities with funds received from international cooperation. In the case of the Von Humboldt Institute, the participation of external sources in its finances amounts to 85%.

### *Regional environmental authorities and decentralization*

Colombia has a system of regional environmental authorities which is relatively strong and decentralized, when compared to the group of Latin American and Caribbean countries. One of its most interesting features is the existence of Regional Autonomous Corporations (CARs) as the highest environmental authorities at the regional level, which are in turn autonomous from the Ministry of the Environment and from territorial entities (Departments and Municipalities). The 33 existing Regional Autonomous Corporations are the uppermost environmental authorities and the chief executors of national environmental policies at the regional level. They are followed, in a hierarchical order, by departments and municipalities, which share with this last responsibility for implementing the policies, programs, plans and projects defined by the Ministry. In addition, cities with a population of over one million inhabitants (Bogotá, Medellín, Cali and Barranquilla) have special environmental entities that carry out the same functions as CARs within their urban perimeters. CARs have financial, economic, administrative and

political autonomy, within the limits established by Law, which include compliance with the policies and directives established by the Ministry of Environment, Housing and Territorial Development as the governing entity of national environmental policy. This is a singular model, not only in the regional ambit but also with respect to the decentralization of public administration at the national level.

In contrast to Colombia, countries with a unitary State organization have highly centralized institutional arrangements that exercise environmental authority at the sub-national level through sectional departments, frequently weak ones, which depend on the Ministry of the Environment or its equivalent for the adoption of decisions on a broad range of issues. Mexico and Venezuela, in spite of their federal organization, also display a high degree of centralization. Among the countries with a federal system, Brazil is the one with the strongest and most decentralized system of regional authorities.

The performance of CARs shows a very heterogeneous picture: from those that carry out effective and efficient environmental management, which pose examples in the Latin American context (e.g. Corantioquia, Cornare, Carder, CVC, Corponor, Coralina), to those marked by administrative dishevelment or corruption, and others whose functioning is satisfactory but not outstanding. There are some CARs which are well provided with economic resources for environmental management, and others that barely have enough resources to survive (Uribe *et al.*, 2001).

The relative independence of CARs from territorial entities, together with the technical strength of some of them, are two facts that would explain why it has been possible to deploy in Colombia policy instruments and programs of considerable complexity, in contrast to almost all the countries in Latin America (and in general terms, to a large number of developed countries), where such accomplishment has not been possible on account of the scarce autonomy or weakness of regional environmental authorities (Rodríguez B. and Espinoza, 2002). Among them, one could mention the establishment of water pollution charges, and the reforestation program aimed at protecting the microwatersheds that supply municipal aqueducts, which rose to 137,000 hectares in the 1994-2002 period (Rodríguez B., 2004; WB, 2000). The execution of a community reforestation program in diverse regions which are the scene of armed conflict, together with the impact of pollution charges, are two aspects that I examine in greater detail in another segment of this article.

Since the very moment of the first CAR's creation, in the fifties, there has been debate over which should be the criteria to define their jurisdiction. Today, CARs of a departmental nature prevail, although the jurisdiction of a large number of them corresponds to specific natural units, in particular hydrographic basins (for example Corpoguvio) or individual ecosystems (for example Corpomacarena). Some argue that CARs should be restructured on the grounds of a basin-based criterion – a unit that is well-suited for the management of hydrographic resources, but which can entail problems when it is crossed with other units which are more appropriate for the management and conservation of biodiversity.

Besides, since the adoption of Law 99 of 1993, it has been said that there is an excessive number of these corporations. Their number could eventually be reduced, but such transformation should be grounded on a careful evaluation of the institutional requirements of effective and efficient governance at the regional and local levels, and not on the simplicity of assuming that less CARs will mean higher capacity for protecting the environment.

### *Financial shielding of the National Environmental System*

When one compares the evolution of environmental investment in the Latin American countries during the past decade, it turns out that Colombia is one of the countries in the region which has made a larger effort to allocate new resources for the field (Bárcenas and others, 2001).

This larger amount of economic resources which are nowadays available for environmental investment, in comparison to the eighties decade, comes as a consequence of the specific finance mechanisms established in the 1991 Constitution and in the Act that created the Ministry of the Environment. Among the instruments which are the currently at the origin of such resources, one should indicate in particular, the destination of a percentage of the immovable property tax to CARs, the transfers made by the electricity sector to CARs and municipalities, the Royalties Fund which finances environmental projects executed by territorial entities, and the pollution and use charges. These and other mechanisms established by the law, position Colombia as the country with the most complete system of instruments for the generation of economic resources for environmental management in Latin America and the Caribbean.

The existence of these resources destined for environmental management has not only given way to an increase of environmental investment in the long term, but it has also made the fate of that such investment independent from the oscillations of resource allocations in national budgets. Indeed, the fiscal deficit which almost all of the countries in the region have undergone, has forced a reduction of public expenditure, many times through adjustment programs agreed with the International Monetary Fund. Such policy has borne a negative impact upon social and environmental investment, with a much higher frequency than upon other sectors. In this field Colombia is one of the countries in the region which has gone through one of the most drastic adjustment processes, since 1997. However, the environmental investments made by CARs have not been essentially altered, as a consequence of their financial armor. In addition, during that period, the National Royalties Fund has been able to finance a large number of projects to be executed by territorial entities, after approval by CARs.

In this point it must be underscored that the generation of said resources is highly concentrated in 12 of the 33 CARs, for which reason a Fund, financed with 20% of their total value, was created with the aim of destining these resources to the CARs in whose areas of jurisdiction such economic instruments do not produce much, or nothing at all (Rudas, 2001). In contrast to CARs, the investment resources of the Ministry and the

research institutes have been drastically affected by the measures destined to reduce public expenditure (CNP, 2002). Surely for some economists this type of income and financial armoring is not coherent with macroeconomic orthodoxy. But it must be recalled that the existence of the instruments that generate said income is based on “the polluters-pays and user-pays principles” which correspond to economic conceptualizations that seek to recognize the economic value of the environmental services provided by ecosystems (Rodríguez B. and Uribe, 1996).

### **Advances in environmental protection**

On the grounds of the strengthening of its environmental institutionality, the country has managed to increase the protection and restoration of a number of strategic environmental assets, and to solve some of its most critical environmental problems, or to establish the bases for their solution. A summary of the main achievements is presented in the following Table. Given that it is not possible to refer in detail to each one of them in this brief essay, I have selected two of these accomplishments as illustrative examples (see Table 8.2.): (i) the reduction of the environmental impact of critical sectors of the manufacture industry, and (ii) the reforestation of 137,000 hectares for the protection of the basins that supply municipal aqueducts, carried out through community work in areas especially affected by the armed conflict.

<b>Table 8.2. Main achievements in environmental protection: 1990-2002</b>
1. Reduction of the environmental impact of critical sectors of the manufacturing industry (e.g. industrial areas of Mamonal and Rionegro, great manufacturing industry of Bogotá), agro-industries (e.g. the sugar and oil palm industries), extractive activities (in particular large mining and hydrocarbons), the construction of infrastructure (especially roads) and services.
2. Reduction of the pollution of a large number of freshwater sources.
3. Implementation of programs for air decontamination (e.g. the establishment of air quality monitoring networks in 14 urban centers of the country; the participation of Bogotá in the program for air decontamination of the main cities in the region).
4. Deployment of programs for solid waste disposal in regional-scope sanitary landfills (e.g. the six regional landfills that cover the Huila department).
5. Reduction of visual contamination in some urban centers (e.g. Bogotá, one of the Latin American metropolis with the lowest levels of this type of contamination).
6. Initiation of the first wetlands, forest and coastal ecosystems restoration processes (e.g. the restoration of the Large Marsh of Santa Marta - <i>Ciénaga Grande de Santa Marta</i> -, the restoration of 13 wetland areas located in the urban perimeter of Bogotá and neighboring areas).
7. Reforestation for the protection of basins that supply municipal aqueducts. In the 1994-2002 period, 137,000 hectares were reforested by way of community projects, particularly in areas of armed conflict.
8. Strengthening of protected areas: (i) implementation of the program “Parks with the people”; (ii) creation of new national and regional parks; (iii) creation of a system of civil society protected areas (PNC, 2002).

9. Advances in the environmental management of indigenous territories and lands collectively owned by Afro-Colombian communities.
10. Strengthening of environmental education at different levels. In particular, mention should be made of the Environmental School Programs ( <i>Programas Ambientales Escolares – Praes</i> ), which are broadly used at the level of basic education, and eventually become linked to the solution of specific environmental problems from the classroom and the educational institution.
11. Initiation of urban programs that aim to simultaneously materialize diverse social, environmental and economic purposes: (i) territorial organization plans; (ii) deployment of a system of mass transportation in Bogotá (Transmilenio) and a system of bicycle routes (250 Km.), which are currently being replicated in other cities of the country; (iii) provision of public spaces –including recreational green areas- and urban arborization.
12. Promotion of green markets: organic agriculture, generation of projects for the mitigation of the effects of climate change, certification of goods and service that proceed from cleaner production processes.
13. An increase of environmental investment as a percentage of the GNP. Increase of international technical co-operation.

*Source:* Based on Rodríguez B., 2003 and 2002.

#### *Reduction of the environmental impact of the manufacture industry and extractive activities*

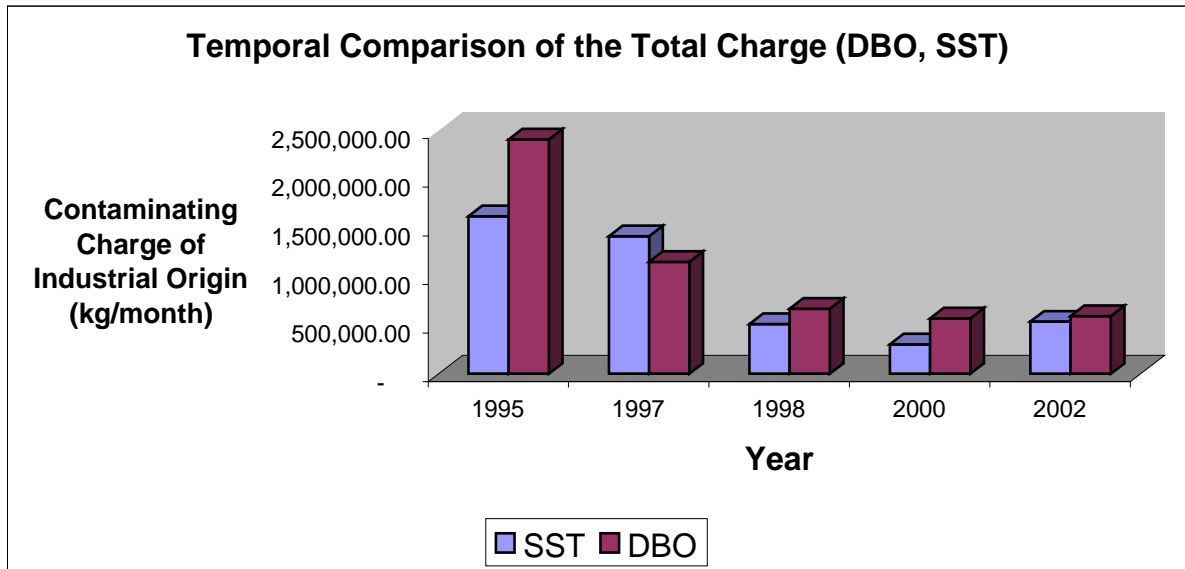
Contaminating discharges of industrial origin have been reduced in all the country's industrial centers since the deployment of the environmental institutional framework established by Law 99 of 1993. Such is the case of Bogotá, the city with the highest industrial concentration in the country, where during the 1995-2002 period, reductions of DB05 and Suspended Solids SST reached 75.3% and 66.9%, respectively (Figure 8.1.). The case of the industrial corridor of the Antioquian East also illustrates this positive tendency (Figure 8.2.).

Some industrial sectors that recorded high rates of contamination before 1993, present notorious advances. This is proven, for example, by a recent study that evaluated the evolution and main tendencies of environmental management in the oil palm sector, which found a positive balance, both at the field level and in the extracting plants (Rodríguez and Van Hoof, 2004).

In 1993, water pollution was the most important environmental problem of this sector, which was characterized by its high levels of organic matter discharges into waters, with serious consequences for the regions in which the extracting plants are located. Ten years later, this became an irrelevant matter, given that currently 98% of the 50 extracting plants have systems for the treatment of discharges that remove over 95% of their organic charge. Thus all the companies of the sector comply with the legal regulations in force. In addition, nearly half of them use treated waters for plantation irrigation, with which it is

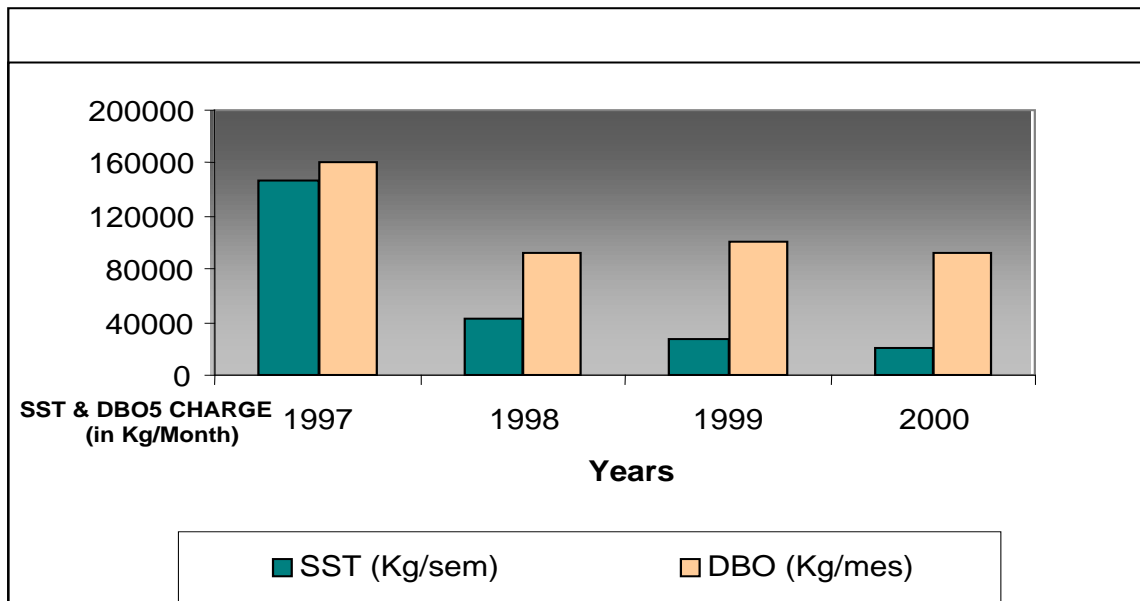
foreseen that this sector shall reach the level of zero disposal of wastewater in the mid term (see Figure 8.3.).

**FIGURE 8.1. Organic charges of industrial origin, Bogotá, D.C.**



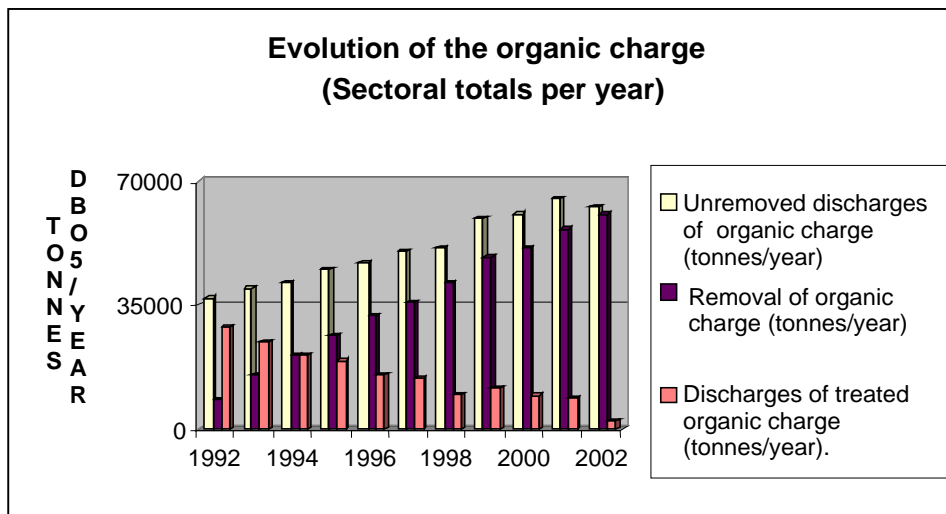
*Source: Taken from DAMA, 2003*

**FIGURE 8.2. Contaminating charges of industrial origin, Antioquian East**



Source: Taken from Uribe et al., 2001

**FIGURE 8.3. Palm oil extraction plants. Evolution of the removal of discharges in DB05**



Source: taken from Rodríguez and Van Hoof, 2004.

In general terms, the industry's improved environmental performance is largely the result of having set in motion new policies and policy instruments, as well as of having



strengthened others which had been used since long before. Among the former, the Voluntary Conciliation Agreements for Clean Production (*Convenios Voluntarios de Concertación para la Producción Limpia*), technical assistance programs and economic instruments stand out; and among the latter, environmental licenses, education and information are noteworthy. In other words, policies and instruments were set in motion during the nineties decade, and they have produced concrete results in the fight against contamination, with a great potential for addressing present and future environmental problems.

Pollution charges (which are paid today for discharges into sources of water), based on the “polluter pays” principle, is an economic instrument which has favored decontamination. A preliminary assessment of its implementation indicates that the BOD discharges fell by 31,5% and TSS discharges fell by 34,2% in the priority basins over which this instrument has been applied -by 21 CAR and the environmental authorities of the four larger cities- (Martínez, 2002). The results of their design have been underlined in the studies carried out by the World Bank (WB, 2000) and ECLAC (Acquatella, 2001) on the application of economic instruments for environmental management, and it has been pointed out as a pioneering experience in the developing world, which is fit for replication in other countries.

Finally, environmental licenses not only show positive results in the fields which have been mentioned above, but they have also been a key to the improvement of the environmental management of the great works of infrastructure (e.g. national roads, ports), the chief industrial sectors, large mining projects and hydrocarbon exploration, exploitation and transportation.

### **Community reforestation amid the armed conflict**

A reforestation program was implemented during the last decade, placing emphasis on the protection of the microwatersheds that supply municipal aqueducts. This program was developed with the participation of poor rural communities, predominantly located in regions affected by the armed conflict. During its first stage it was called the “Microwatershed Sub-Program” of the Natural Resources Program, and through its activities, nearly 50,000 hectares were intervened between 1994 and 1998; in its second stage it was named the “Green Plan”, and its execution produced the intervention of almost 87,000 hectares between 1998 and 2002.

An investigation carried out in the context of the project “Armed conflict, peace and the environment” (*Conflicto armado, paz y medio ambiente*), supported by the National Environmental Forum, tried to explore the circumstances that permitted the Green Plan’s execution amid the ongoing war. For this purpose, it examined the manner in which the Plan’s specific programs were executed in especially conflictive areas, in particular those located under the jurisdiction of five CARs: the Autonomous Regional Corporation of the North (*Corporación Autónoma Regional del Norte – Corponor*), the Autonomous Regional Corporation of the Cesar department (*Corporación Autónoma Regional del*

*Cesar – Corpocesar*), the Autonomous Regional Corporation of the Valle del Cauca department (*Corporación Regional Autónoma del Valle del Cauca - CVC*), the Autonomous Regional Corporation of the Río Negro – Nare area (*Corporación Autónoma Regional de Río Negro–Nare – Cornare*) and the Regional Autonomous Corporation for Sustainable Development of the Amazon (*Corporación Autónoma Regional de Desarrollo Sostenible de la Amazonía – Corpoamazonia*) (Rodríguez B., 2004).

The evidences gathered in this study constitute decisive proof that one of the main explanations for the viability of the Green Plan's realization was the commitment of the communities. They were fundamental during the processes of persuasion of (or negotiation with) guerrillas and paramilitaries, as pertinent, in order for these groups to allow the execution of the Green Plan projects.

Communities found in the Plan a strong economic incentive in the short and medium terms, represented by the income that they received on account of the salaries associated to the duties of plantation establishment and maintenance during the first two years. These resources served to alleviate these communities' poverty during a period in which the country, and in particular the countryside, were suffering the sequels of economic recession.

But touching upon the topic of incentives, one should bear in mind the contributions of communities to the execution of the Plan. In the first place, a contribution in manpower which amounted to 20% of project costs. In second place, the destination of part of their parcels to foresting activities, which frequently corresponded to lands formerly applied to agrarian uses. This decision to change the use of land is related to communities' expectations on the environmental impacts of the Plan, in particular the hydrological ones, as well as on its other economic benefits (for example, the supply of firewood in the mid term and timber in the long term). Although the Plan formally defined its general objective as the restoration of forest ecosystems, at the field level the CAR made emphasis on the significance of watershed protection for the provision of water to municipal aqueducts, a benefit which, as pointed out by some assessments, was an important motivation for communities (MAVDT, 2003).

The Plan's implementation can also be explained by the existence of certain governmental institutions, in particular the Ministry of the Environment (today Ministry of Environment, Housing and Territorial Development) and Regional Autonomous Corporations, which are identified in their areas of jurisdiction as fundamentally technical entities, with which they managed to maintain a certain neutrality towards the war. Additionally, a key group of highly committed officers played a critical role in its execution, given their compromise with an activity in which they found positive social, environmental and economic impacts. Today, CAR officers and technicians enjoy a valuable tradition and work experience with communities, which allowed them to deal with the Plan under very adverse public order conditions at the local level –shires and municipalities-. And which constituted in many cases the grounds of their legitimacy among communities themselves, a circumstance which ultimately placed them in a

favorable position for the persuasion of (or negotiation with) armed groups. This last situation became even more evident in those regions in which the INDERENA and CARs had enjoyed a trajectory of executing community programs which, as a whole, has lasted over 25 years.

In general, the communities themselves dealt with the task of persuading the armed groups to allow the presence of CARs in the locations chosen to implement the Green Plan. But normally this task had to be reinforced with direct contacts between directors or officers of the Ministry of the Environment and of CARs with guerrilla commanders and paramilitaries. These contacts were made in some cases at the initiative of the officers themselves, and in other cases at the initiative of the armed groups. The field officers of the Ministry and the corporations ran considerable personal risks. These became higher in the areas that were the object of dispute between guerrillas and paramilitaries, given the possibility of being identified by one or the other as collaborators of the adversary, for the sole fact of supporting some communities located in enemy territory, or for having established contacts with any one of the commanders with the aim of seeking his approval for the realization of a given project.

After examining different modalities of conflict which favored or placed obstacles upon the execution of the Green Plan, as well as the positions of the illegal armed groups towards this governmental program, the study underscores the following:

“The fact that governmental reforestation programs can be carried out amid the conflict—many times in locations marked by a war with cruel and vicious expressions against civilians—, is an unmistakable sign of the existence of communities that dream and believe in a better future. These communities seem to have found in the reforestation of micro-basins a collective project for the reaffirmation of their territorial rights, a factor which has been identified in this study as the main explanation for their commitment with the execution of the Green Plan” (Rodríguez B., 2004).

The community reforestation carried out during the 1994-2002 period finds its first antecedents in 1976, when the INDERENA initiated the Integrated Program Watershed for Protection (*Programa Integrado de Protección de Cuencas – Pridecu*), as well as in other programs of the same nature implemented during the eighties and nineties decades by CARs. The great continuity which is observable in this policy during the past 25 years seems to be ensured again for the 2003-2006 period, through the Program for Restoration and Conservation of Forest Ecosystems (*Programa de Restauración y Conservación de Ecosistemas Forestales*). Announced by the Government of President Alvaro Uribe in June 2003, it shall place its focus on peasant communities, and it intends to achieve the reforestation of 120,000 hectares.

### **The Government of Alvaro Uribe: Adjustment or weakening of the National Environmental System and of national environmental policies?**

A number of reforms have been introduced to the National Environmental System (*Sistema Nacional Ambiental – SINA*) during the government of President Alvaro Uribe; their motivations and justifications have raised great controversy, and their results are uncertain. In general terms, environmentalists and representatives of diverse non-

governmental sectors have considered that there has been a retreat in environmental policy, when compared to the three preceding governments (Santamaría, 2003), a point of view that was accepted and summarized in the Editorial column of newspaper *El Tiempo* by the end of 2003. Why is the Government of President Uribe, who has enjoyed unprecedented levels of popularity in the country's recent history, becoming the target of severe judgments by environmentalists?

### *The Ministry of the Environment, Housing and Territorial Development*

At the beginning of 2003, the Ministry of the Environment, Housing and Territorial Development (*Ministerio del Medio Ambiente, Vivienda y Desarrollo Territorial – MAVDT*) was created, on the grounds of the former Ministry of the Environment, to which the functions related with housing, drinking water, basic sanitation and territorial development were transferred in practice – they had previously been under the responsibility of the Ministry of Development, which was suppressed. The reform was not originated in an assessment of the achievements, strengths, weaknesses and perspectives of the Ministry of the Environment, nine years after it was created. It was simply the result of a promise made by Alvaro Uribe during his presidential campaign, in the sense of reducing the number of Ministries as a strategy to cut down bureaucracy and diminish the fiscal deficit.

Different representatives of civil society signaled that even though the reform was not motivated by the purpose of strengthening the environmental authority at the national level, it doubtlessly offered opportunities to do so. But at the same time it was underscored that the reform also entailed potential threats to weaken the national environmental agency. After two years, the balance of results does not seem positive. Indeed, the magnitude of the duties related to housing, drinking water and basic sanitation, the billionaire-scale public and private economic resources involved in these activities, and the private sector interests at stake, as well as the current government's imperative to prove results in the short term in these matters, particularly housing, have all brought as a consequence that the Ministry has concentrated all of its energies in those fields, downgrading its environmental management duties to a second rank. In other words, the prevention of environmental damages, the conservation and restoration of renewable natural resources and the environment, as well as the creation of conditions for its sustainable use, have passed to a second line of hierarchy when compared to the fulfillment of the new functions transferred to the Ministry. In general terms, this whole situation was made operational, or rather intensified by the measures adopted by Minister Cecilia Rodríguez, who gave scarce importance to environmental topics in her public interventions, as compared to the other issues under her responsibility. Finally, her poor performance in the implementation of the complex reform caused her removal from the post after 15 months of exercise.

The presentation to Congress of a governmental bill to reform Law 99 of 1993 is added to the above facts – a bill which was badly received by environmentalists (Portafolio, 2003). The loss of valuable human resources in the environmental field by the Ministry of the

Environment, Housing and Territorial Development was also added, as well as a 50% reduction in the resources allocated in the national budget for environmental investment, as compared to the ones allocated by the foregoing government for the Ministry of the Environment (reference is made here to the resources that correspond to the ordinary income of the nation and which are foreseen in the national budget; as I pointed out before, the National Environmental System also has its own resources); this reduction, carried out in the context of the decrease of public expenditure, turned out to be more drastic upon the environmental sector than on other governmental sectors (CNP, 2003).

In spite of the above described situation, the Ministry still has great opportunities to strengthen the country's capacity to protect the environment, on the grounds of some of the powers that it was entrusted. These would allow it to deploy an integrated water management strategy with the aim of addressing the growing scarcity of this resource in the most populated areas of the country – doubtlessly one of the most serious environmental problems of the present and future. Its solution does not only require the necessary activities of providing drinking water and basic sanitation. It is also necessary to control the sources of industrial and agricultural pollution, as well as to apply an ecosystem approach for water management which takes into account the location of water sources, the uses to which it may be applied, and the requirements posed in terms of watershed conservation and management in order to ensure its quality and quantity. Similarly, the Ministry now holds the duty to address the serious problem of solid waste disposal, an issue in which the country is still quite underdeveloped. And aiming towards its solution, the Ministry has the possibility of strengthening or generalizing integrated strategies with an environmental perspective, such as recycling, or the reduction of waste generation through “clean production” and other modalities. Additionally, the Ministry is now invested with all the powers related to the process of formulation and implementation of municipal land use plans (POTs), which were previously distributed between the late Ministry of the Environment and the Ministry of Development – a fact which could allow it to lead this process in a more articulated manner.

### *CARs and the reform of Law 99*

Doctor Alvaro Uribe announced, since his presidential campaign, a reform of CARs based, in his own words, on the need to correct their inefficiency, ineffectiveness, corruption and perverse politization. He even got to speak on several occasions of their possible suppression. However, those statements were not based on an evaluation study of these entities directed to identify their achievements, flaws and gaps, and to define their future on those grounds. They were rather based on the very Colombian tradition of disqualifying what has been done by past governments, a tradition which is combined with a tendency to ignore the strengths of the country – when compared to the cases of other countries in the region. For the case of environmental institutions, the negative opinion of President Uribe is in marked contrast to the very positive one held by representative regional experts in environmental policy (FNA, 2004).

Finally, the National Government, through the Ministry, submitted a bill to reform Law 99 of 1993 to the consideration of Congress. The bill was adorned with a broad number of reforms on different matters, even though its original motivation was fundamentally aimed at reforming the management of CARs (by way of de-politizing the director's designation as one of the bill's aims), and at seeking a higher transparency in their administration. During the 2001-2004 period, several fora were held on the topic of the reform project, in which three visions by the representatives of civil society organizations, the productive sector and regional governments prevailed: (a) Law 99 of 1993 presents a very positive balance; (b) the performance of CARs is very heterogeneous, but in balance, their impact as regional executors of the national policy is adequate; (c) the modifications proposed in the Government's bill, together with the modifications that the document underwent in the Fifth Commission of Senate –in which the bill was approved in first debate-, can almost totally be carried out through the simple regulation of the provisions of Law 99; (d) some of the reforms harm the basic foundations of the architecture of Law 99, such as decentralization, autonomy and participative democracy (Comisión Quinta, 2004).

An assessment made by the Ministry after the submission of the bill to Congress, which sought to classify CARs according to their performance, showed that among them, there exists a sub-group of effective and efficient entities, which should constitute the pattern and measure for reforming those entities which are not so effective or efficient. Alongside this evaluation, one should also recall a study made by the CEDE (Andes University) about those CARs with jurisdiction over the larger part of the country's industries, in which it was indicated that in balance, there exists a positive perception of these entities, but that while some of them are known for their efficiency and transparency, others are pointed out for precisely the opposite traits (Uribe *et al.*, 2001).

### *Corrective measures for policies?*

In the month of April, 2004, the new Minister of the Environment, Housing and Territorial Development, Sandra Suárez, requested Congress its approval to withdraw the legislative bill to reform Law 99, an act which can be considered as a recognition of the diverse criticisms formulated against such proposal. All along its formulation process and throughout the legislative procedure, CARs carried out an active process in defense of the National Environmental System. The faults and problems of CARs were not always recognized, but the positive results of their strategies serve to prove that they have some kind of political armor, which is ultimately a positive matter for the health of the National Environmental System. At the same time, it is fundamental to recognize that the President's strong criticisms against CARs have forced these entities to examine their own selves and correct some of their drawbacks, even though they did not fully recognize them during the public debates. But the governmental initiative to reform Law 99, marked by its improvisation, was perceived by many sectors as an evidence –among others- of the retreat of environmental policy, when compared to the one implemented by the three preceding governments.

The Uribe government's valid concern at the politization of the directions of CARs led it to establish, by decree, a merit-based system to select CAR directors, which began to be implemented in the month of December, 2003. Directors are thus designated for three-year periods, from among a little over 1,000 candidates. And as part of the process aimed at making CARs more transparent and efficient entities, the Ministry is advancing several strategies to articulate national policies at the regional level into the tri-annual plans that the Corporations must elaborate and approve, under the leadership of the recently designated directors. At the same time, the Government intends to issue a decree establishing the indicators by which to measure the performance of CARs in relation to the goals set in their tri-annual plans. This group of measures would simply corroborate the observations of those who had noted that it was possible to achieve improvements in CARs through regulatory decrees and other governance measures by the Ministry, without the need to introduce reforms to the law.

In addition, the new Minister led, at the beginning of 2004, a process of strategic planning on the grounds of which a document that explains in detail the Ministry's policies was drafted (MAVDT, 2004a). In its presentation, it is underscored that the Ministry's functions place the country in a better position to fulfill the millennium goals and the agreements reached at the World Summit on Sustainable Development in Johannesburg, which "foresee an increase in the access to basic requirements such as drinking water, basic sanitation, appropriate housing and the protection of biodiversity" (Id., 5). This seems more like an *a posteriori* justification of the reforms introduced. But apart from that, along the text a number of measures are identified to carry out an integrated management of water and attain a more articulate territorial development. It is thus attempted to take advantage of the opportunities posed by the new institutional framework. But it does not seem clear just how environmental management will be made compatible with the Ministry's functions in matters of housing provision, which have taken to date a very substantial part of its uppermost cores' energy, to the detriment of its other responsibilities.

Likewise, the Ministry has started a process to define Colombia's environmental challenges for the next decade, with the participation of governmental and non-governmental organizations and experts (MAVDT, 2004c), and an evaluation of the Code of Renewable Natural Resources is proposed on the occasion of its thirtieth anniversary.

Do these measures express a correction in the route of the current government's environmental policy, given the social pressure expressed through reiterated criticisms by different sectors? Is it possible that at the end of the four-year term, the environmental policies with which this Government started off will be remembered as a traumatic process of adjustment and reform that ultimately led to strengthening environmental management, or, at the least, did not lead to its weakening? At this point, and in spite of some positive signs which have emerged during the first semester of 2004, it is difficult to decipher the Government's political will in matters of environmental policy. Its destiny is still uncertain, but it will probably be marked to a large extent by a continued twelve-year process of strengthening of the Colombian State's capacity to protect the

environment, which was in turn built upon positive antecedents that date back to the beginning of the fifties decade of the last century.

### **Final considerations: strengths, deterioration and a privileged position**

At the same time that the strengths of the Colombian environmental institutions and policies must be recognized, it is evident that they perform in a scenery marked by an increase in environmental degradation and destruction, a phenomenon shared with all the countries in the globe. In Colombia, deterioration has become manifest in the decline of the urban environments where the majority of the population is located, the persistence of deforestation, the increase in pollution and the scarcity of continental waters, the disappearance and degradation of ecosystems which are unique at the global level, the increase in the number of flora and fauna species threatened by extinction, the loss of soils, contamination of the atmosphere and marine environments, and the decline of fisheries.

The current situation may be envisioned by stating that the advances which have been recorded to date have not yet been sufficient to revert the inertial tendencies towards the destruction of our natural wealth, which are determined to a great extent by population growth and by the country's prevailing lifestyles. Such advances are conditioned by these forms of development, as evinced by the limits imposed by poverty, or by the negative pressures upon natural resources generated by many of the dominant production and consumption patterns. In addition, the war imposes singular limitations and challenges to environmental protection.

Nevertheless, Colombia still enjoys an environmental wealth which generates unique opportunities for it to seek a better insertion in the ambit of globalization and, at the same time, to protect ecosystems which are of interest to humanity as a whole. These are opportunities that the country would be able to materialize if it takes the great experience gained during the last decades in the area of environmental management as a starting point, which I have proven along this essay.

### **Annex**

*How is Colombia positioned at the global level in regards to its ecological sustainability?*

Colombia, like all developed and developing countries, has recorded great levels of environmental deterioration after the Second World War. But in spite of this phenomenon, it holds a relatively high place among the countries of the world for its ecological sustainability. According to a composite index designed to measure and compare the environmental sustainability of all countries in the globe, launched at the Global Economic Summit (Davos) in 2001, Colombia is ranked 36 among a list of the 122 most representative countries for their economic and ecological importance.



According to Green Peace and Friends of the Earth, Colombia would be ranked 13 among those same countries, on the grounds of a critical revision and recalculation of the index presented at Davos. In this reformulation process, greater specific weight was given to the state of conservation of natural ecosystems, and to each country's contribution to global environmental problems, two aspects to which the Davos index gave lesser importance (The Ecologist et al., 2001).

It should not be surprising that Colombia is ranked in a relatively high ecological sustainability position, because the country still has an enormous wealth in hydrological resources, biodiversity and forests. However, such wealth is heterogeneously distributed across the national territory. We can state nowadays that the environmental supply of the regions in which the majority of Colombians live is poor in one or more of the components that affect their quality of life: water, forests, soils, biodiversity and air.

### *Environmental wealth and its unequal distribution across the national territory*

The country's great wealth in hydrological resources, which is used in its statistic expression to signal Colombia as one of the world's water powers, is concentrated in the regions with low population densities, in particular in the regions of the Amazon, the Pacific and the Orinoco, where the resource is abundant in quantity and quality. In contrast, the regions where more than 80% of Colombians live, which correspond to the Magdalena and Cauca basins, only account for 10.6% of the country's hydrological supply. In these regions, deforestation has caused the loss of many sources of water, as well as imbalances in hydrological regulation, generating seasons of extreme dryness and of excessive waters (MMA, 2002b).

In addition, contamination processes have dramatically diminished the supply of quality waters for domestic, agricultural and industrial uses. But contamination has not only affected rivers and streams, but also a large part of wetlands, particularly the ones located in the Caribbean region, and the Andean lakes and pools, as well as the marine environment.

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### **Unequal distribution of hydrological resources**

Colombia has an annual precipitation rate of 3,000 mm, which is favourably compared with the world average, located around 900mm, and with the South American average, near 1,600 mm.

Such precipitation generates a specific surface runoff rate of 58,0 liters/second/square kilometer. This is three times higher than the South American average, and six times higher than the world average.

The great Colombian hydrographical star supplies many of the main affluents of the three major basins in the continent: Amazon, Orinoco and Magdalena.

This great water supply is not homogeneously distributed among the regions of the country – it is concentrated in the Amazon region and in the “bio-geographical” Chocó region.

#### A deteriorating wealth

The Magdalena and Cauca river basins, which account for 10,6% of the country’s hydrological supply, are undergoing a process of increasing deterioration. These territories represent 24,8% of the country’s continental area, 70% of the population inhabits them, and they generate 85% of the GNP.

Given the Magdalena River’s high assimilation capacity, consideration of the Dissolved Oxygen and Chemical Oxygen Demand (DQO) parameters would indicate that in balance, the river does not show significant deterioration conditions, according to the measurements carried out in the 2000-2001 period. However, in some stretches these parameters are above the standards, with negative consequences for riparian municipalities. In addition, its high sediment load is the main cause of the deterioration of the Cartagena bay and the coral reefs of the Rosario islands, though the Dique Channel (Canal del Dique). The river presents near its mouth a Chemical Oxygen Demand charge of 375ton/day.

The Bogotá river is dead at the height of the capital, according to the available information for the 2000-2001 period. Oxygen maintains limit conditions close to zero, the Biological Oxygen Demand records the highest concentration values in all its course, with a value close to 160 mg/L, and an average DQO of 290mg/L is registered.

Source: MMA, 2002b.

Colombia holds the second place among the 12 countries with the highest biodiversity in the world, after Brazil. Such biodiversity is mostly located in its continental territory, in particular forest ecosystems, but its marine and continental aquatic diversity is also considerable and singular (Mittermeier, 1997).

46% of the country is covered by forests, a significant figure in comparison to the situation of most of the countries in the world. Close to 42 million hectares, the equivalent of 37% of the national territory, have been intervened and transformed. However, 69% of the country’s continental surface has forest aptitude, which means that 34 million hectares of forests have been destroyed, and their soils dedicated to activities for which they present serious restrictions. The most extensive forest coverage of the country is concentrated in the Amazon and the Pacific which preserve, respectively, 65% and 75% of their natural forest ecosystems. In contrast, the Andean and Caribbean regions preserve a very low proportion of their natural forests, which amounts respectively to 30% and 10%. In addition, a large portion of the remaining Andean forests is concentrated in a few locations (e.g. the occidental

flank of the Western Range), which means that extensive regions lack the minimum forest areas required for the maintenance of an appropriate ecological balance and for the provision of essential environmental services, such as the protection of hydrological basins, soil conservation, biodiversity preservation, carbon sequestration and landscape conservation (IDEAM, 1998a; 1998b).

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