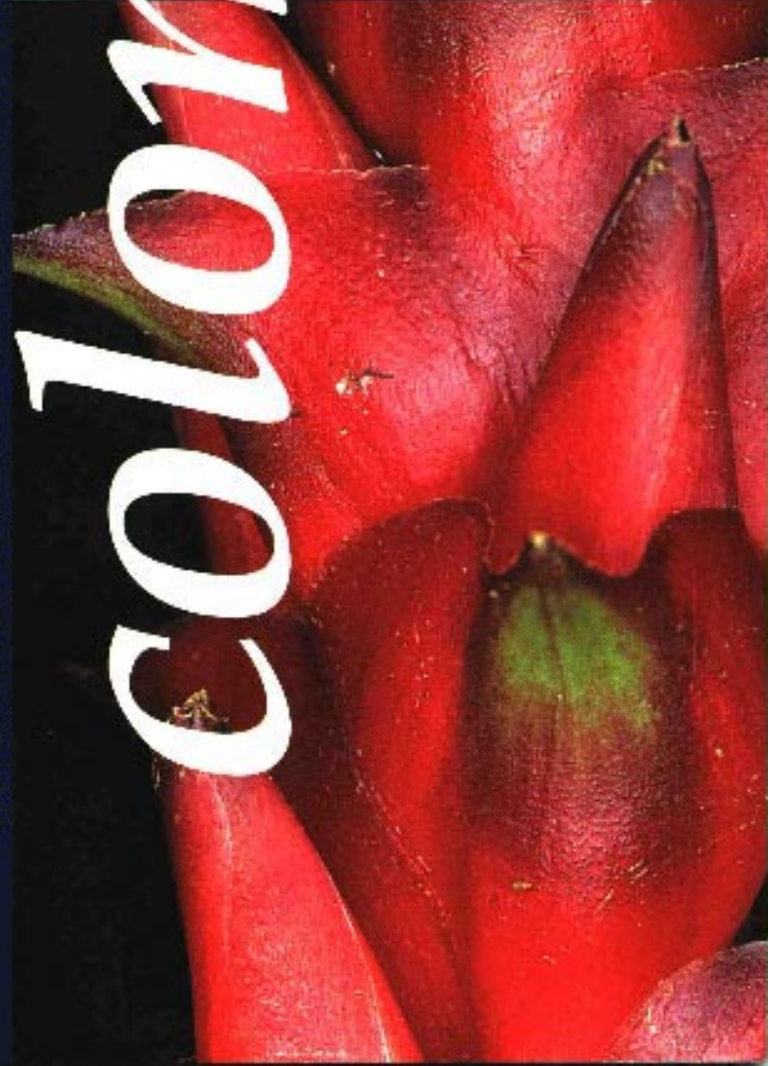
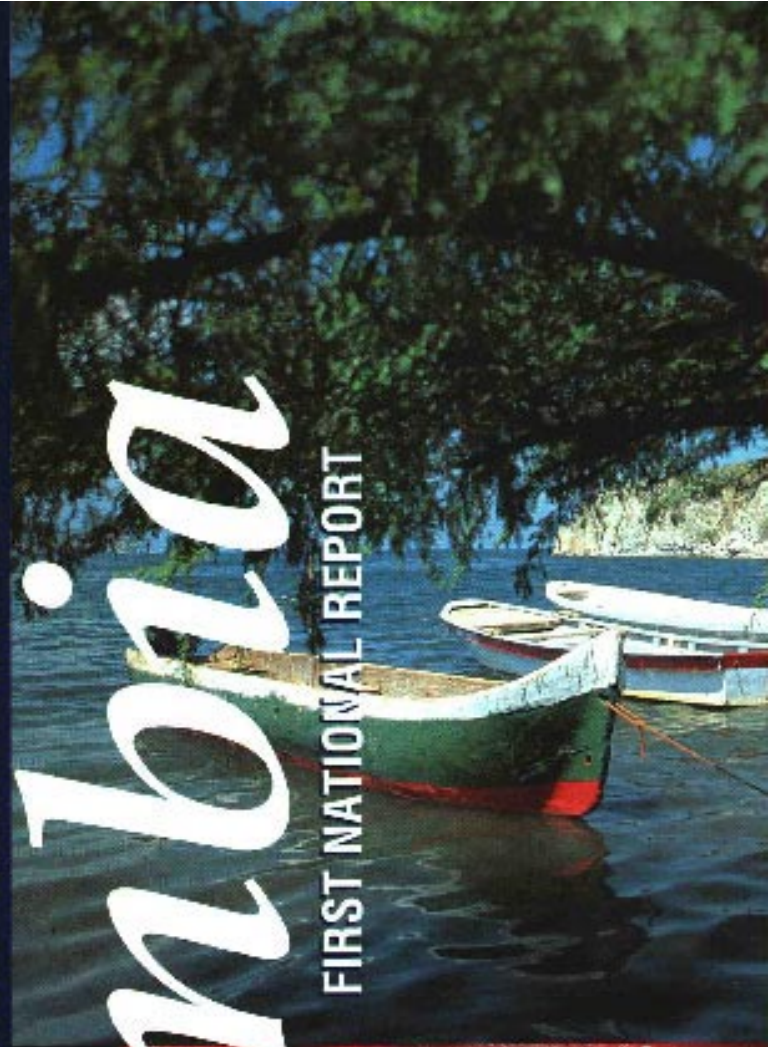




PROGRESS IN THE IMPLEMENTATION OF THE CONVENTION ON BIOLOGICAL DIVERSITY

Colombia

FIRST NATIONAL REPORT



environment

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for future

Over the past seven years, our country has approved laws as well as formulated and implemented policies for the conservation and sustainable use of the Colombian biodiversity

With the ratification of the Convention on Biological Diversity, Colombia has a comprehensive legal framework that has helped to gain coherence in the policy making process by the Ministry of the Environment

This is the first National Report to the Conference of Parties which according to its Decision II/7, should deal with the implementation of Article 6 of the Convention on Biological Diversity

The purpose of these reports should be more than the fulfillment of a requirement of the Conference of the Parties on progress made by each country regarding the implementation of the Convention at a national level. Learning from other reports will no doubt be a valuable experience from which we will all profit to help the survival of our beautiful Blue Planet

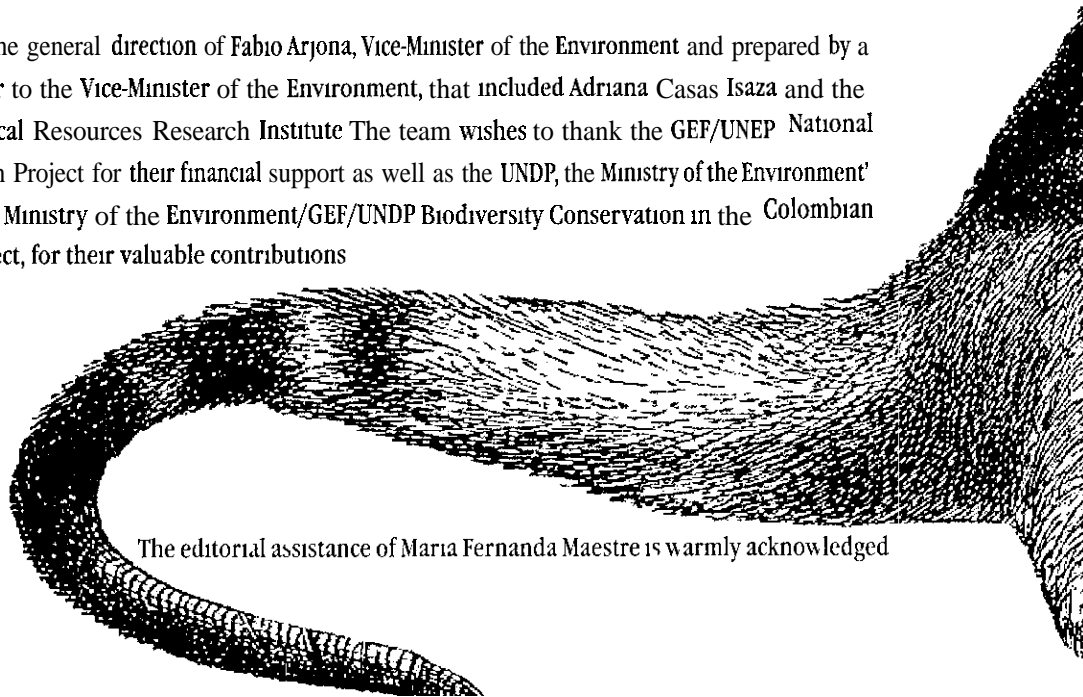
EQUAROO VERANO
Minister of the Environment

APRIL, 1998

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colombia

INTRODUCTION

During the Earth Summit, in 1992, the Convention on Biological Diversity was adopted. Today more than 160 countries have ratified it.

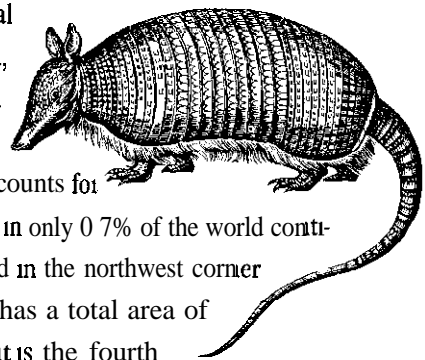
Under Decision II/17 of the Conference of the Parties of the Convention on Biological Diversity, Colombia has prepared its first report on measures adopted to implement Article 6.

This report describes biodiversity in Colombia, and its local and global importance, the legal and institutional framework for environmental action, and finally, the National Biodiversity Policy and its process of implementation, which stresses the need to link biodiversity to social and economic processes in Colombia.

The process of implementation of the National Biodiversity Policy consists mainly of three actions: (1) The National Biodiversity Strategy and its Action Plan, (2) The

National Report on the state of biodiversity in Colombia, and (3) General Measures, adopted over the last decade in different areas, which have a direct or indirect effect on the sustainable management of biodiversity.

The starting point of this report is a summary of the importance of biological diversity in Colombia, which has a privileged place among the centres of biodiversity, since it accounts for 10% of the total diversity in only 0.7% of the world continental surface. It is located in the northwest corner of South America and has a total area of 2,070,408 sq km. Thus it is the fourth largest country in Latin America, and the only South American country to have coasts on both Atlantic and Pacific oceans. Added to this privileged geographical posi-



tion, Colombia also has a variety of natural regions, each with a wide diversity of ecosystems

Colombia has on various occasions recognized the real and potential benefits -some direct, others indirect- which this diversity can bring to the country and to the rest of the world, through the different environmental services which it provides, and on which general life on this planet depends

The second section in this report concerns the main causes of the loss of biodiversity in Colombia. The process of recognition and identification of these causes has been of vital importance to the design and implementation of the Policy, since it calls on the State and the individual to be aware of the strategic potential of biodiversity, particularly in relation to the environmental services provided today, and which are affected by unsustainable practices which have an adverse effect on it

The next section of the report explains the legal framework of environmental action in Colombia, which was first organized systematically in 1974 with a Code for the Management of Renewable Natural Resources, and later, in the last decade, strengthened and complemented by the new Constitution of 1991, which has been called the Green Constitution since it includes the idea of sustainable development and conservation in more than 40 of its Articles

The Constitution, and the commitments made at the 1992 Rio Conference, led to Law 99 of 1993, which created the Ministry of the Environment, decentralized environmental management to regional and local authorities, and created the National Environmental System -SINA

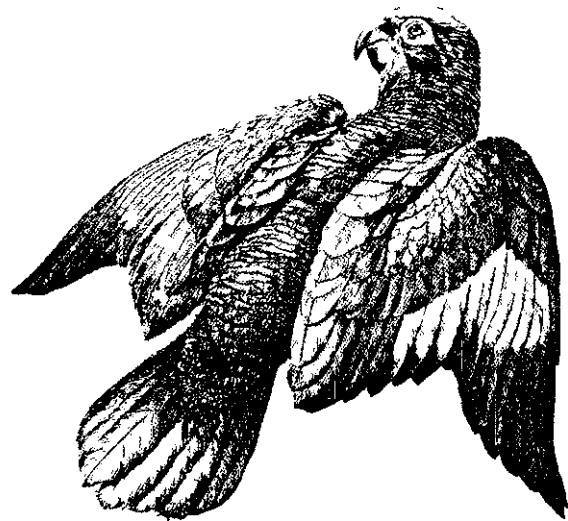
The Constitution, Law 99 of 1993 and Law 165 of 1994 -which ratified the Convention on Biological Diversity- were the basis for the preparation and issue of the National Biodiversity Policy, which was for Colombia an advance on achieving the objectives of the Convention. The policy remarks that sustainable use and conservation of biodiversity are long term projects, and that the policies of other sectors have to be adapted and coordinated towards the common objective of responding to the priorities of the National Biodiversity Policy and of the Convention on Biological Diversity

Finally, the publication and implementation of the National Biodiversity Policy has provided some important input for the adoption of decisions in which sustainable development and conservation can be united into the economic development of Colombia



biodiversity

COLOMBIA AND ITS BIODIVERSITY



The focal points of plant diversity in Colombia are the western Amazon region (upper Cauqueta basin) and the humid tropical forests of Choco in the Pacific Region and in the Tropical Andes, including the Sierra Nevada de Santa Marta.

Colombia stands at the north-west corner of South America. The official map (IGAC 1995) shows a total area of 2,070,408 sq km, of which almost 1,142,000 sq km are continental mainland and Islands, and some 929,000 sq km are territorial waters. This makes Colombia the fourth largest country in Latin America, and the only South America country to have coasts on the Atlantic and Pacific oceans.

Colombia has a population of 36 million, growing at a rate of 17% a year (1994-2000), the third largest after Brazil and Mexico. Most of the population lives in cities, following a trend which started in the 1940s with the incidence of political violence. Migration has accelerated in recent years as a result of the struggle for political control in rural areas. In 1938, 31% of the population lived in the cities, but in 1994 this had grown to 72%.

Most of the population lives in the Andean region, on the Caribbean coast and at the southern end of the Pacific coast. The Ormoco and Amazon basins, which account for about 54% of the country's continental area, are home to less than 3% of the population - less than one person per square kilometre.

The population of Colombia can be classified into three main groups:

1 The **indigenous** races, totalling 600,000-800,000, are composed of 81 ethnic groups distributed in six areas (Reichel Dolmatoff, 1946): the Andes, the Magdalena Valley, the Caribbean coast, the Ormoco basin, the Amazon basin and Vaupes. Rio Negro in the south. The largest groups are to be found in the Amazon basin (26), followed by Vaupes (19), Cauqueta (10), Putumayo and Guainia (9

each) and Cauca and Vichada (8 each). These areas contain 67 reserves created during the Spanish Colonial period and 224 new reserves set up by the agrarian reform agency, INCORA, since 1961.

2 The **Afro-Colombian population**, which lives mainly on the Pacific and Caribbean coasts, totalling 4.9-7 million in number, or 14.21% of the total population (Arocha & Friedman, 1995). Most of them live in urban centres, but some other regions also have a mainly black population, such as the San Andres, Providencia and Santa



Catalina Islands, Palenque de San Basilio on the Caribbean coast, and Tumaco and the Choco Biogeographical region on the Pacific coast

3 The **mestizo population**, which is the numerical majority It is to be found mainly in the Andean region, the Caribbean region and to the southwest, where the major cities have developed

The continental land-mass of Colombia totals 1,141,748 sq km, of which 532,000 sq km are natural woodland, 216,000 sq km have other types of natural vegetation such as savannah, dry zones and swamps, 110,000 sq km are inland waters, perpetual snows and population centres, and the remaining 384,000 sq km are land exploited by farmers and settlers

The map below shows the division of the mainland area into five natural regions Amazon, Pacific Orinoco, Andean and Caribbean, each with a high diversity of ecosystems



The principal biomes are the humid tropical woodlands (378,000 sq km), the savannah flatlands (105,000 sq km), alluvial woodlands (95,000 sq km), andean woodland (45,000 sq km) and lowland woods and amazon *catungales* (36,000 sq km)⁷

Almost 90% of the Colombian Amazon region is covered with natural woodland (320,000 sq km) and other vegetation (5,000 sq km) and is one of the most diverse areas in the country About 74% of it is the collective property of the indigenous communities, some 49,000 inhabitants in total²

Colombia also has extensive territorial waters in the Caribbean and Pacific The economic exclusion zones total 590,000 sq km in the Caribbean and 340,000 sq km in the Pacific³ There are island territories The San Andres and Providencia Archipelago, and banks such as Roncador, Quitasueño, Nuevo, Serrana and Alicia in the Caribbean, and Malpelo and continental Gorgona in the Pacific⁴

Colombia's diversity of ecosystems is the result of its location between the tropics and the wide variety of soils and climates which have over time provided a large "number of geographical areas favourable to a megadiversity of biological species Of all countries lying between the tropics, Colombia has perhaps the greatest diversity Brazil is seven times its size and has a greater number of known species

The Sierra Nevada de Santa Marta massif, on the Caribbean coast, is one example, since most of the biomes to be found elsewhere in the country are present on this massif accounting for less than 5% of the country's total land area⁵

Almost 90% of the Colombian Amazon region is covered with natural woodland (320,000 sq km) and other vegetation (5,000 sq km) and is one of the most diverse areas in the country About 74% of it is the collective property of the indigenous communities, some 49,000 inhabitants in total⁵

Colombia is one of the most biodiverse countries in the world, with only 0.7% of the world's continental land, it has 10% of global biodiversity It is estimated that Colombia is home to some 45,000 species of vascular plants, and only Brazil

surpasses it in the wealth of flora species on a global scale. Some researchers say that Colombia has 15% of orchids identified around the world, more than 2,000 identified medicinal plants and a considerable number of wild species which are commercialized in the global market.

The focal points of plant diversity in Colombia are the western Amazon region (upper Caqueta basin) and the humid tropical forests of Choco in the Pacific Region and in the Tropical Andes, including the Sierra Nevada de Santa Marta.

Colombia is the richest in the world in species of birds (1753) and amphibians (583), fourth richest in reptiles (475) and sixth in mammals (453) (Rangel, 1997).

There are also 27 species of primates (33% of those known in the tropical Americas), second only to Brazil, which has 55 species. The 1,753 species of birds known here represent about 19% of all species known, and 60% of species known in South America, 64 thought to be endemic⁶. If other groups as diverse as butterflies are added in, Colombia's biodiversity is even richer.

In addition to having its privileged place in world biodiversity, Colombia receives direct and indirect benefits from it because they are directly related to the stability and productivity of its ecosystems.

The biodiversity is basic in Colombia's daily life and is essential to its economic development, since there are direct benefits to sectors such as agriculture, fishing, forestry, medicine, cattle raising, wild life breeding and tourism.

AGRICULTURE

In world agriculture, all commercial plants are a product of the management of biodiversity, through genetic improvement. Of the 270,000 species of vascular plants known, some 3,000 are edible and only 200 have been domesticated as crops. Today, about 90% of plant food come from only 20 species such as rice, barley and wheat.

Colombia has a wide variety of wild plants, which have traditionally been used by different communities, that have a major potential for commercial use. Many of the main crops originated in Latin America -the bean, the tomato, the potato, yucca and cacao- are of economic importance to Colombia. We therefore need to preserve the biodiversity which provides the stability and productivity to ecosystems in which these crops grow.

These crops can be affected by a number of pests (insects, fungi and virus) which can in many cases be frustrated by natural biological agents. Some cases of these uses in important economic crops have been the wasps used for biological control in sugarcane, and fungi to control weevils in coffee⁷.

CATTLEBREEDING

In cattle-raising and other forms of animal husbandry, it should be noted that the main source of protein in Colombia is the domesticated animal. Cattle breeding for meat and milk is a valuable source of income for regional and national economies, and is derived from the use of biodiversity.

In 1996, these activities produced some US\$350 million, or 22.5% of Colombian farm production.

The main origins and domestication of the principal species used, are outside Colombia,

but there are nonetheless breeds adapted to local conditions which offer an

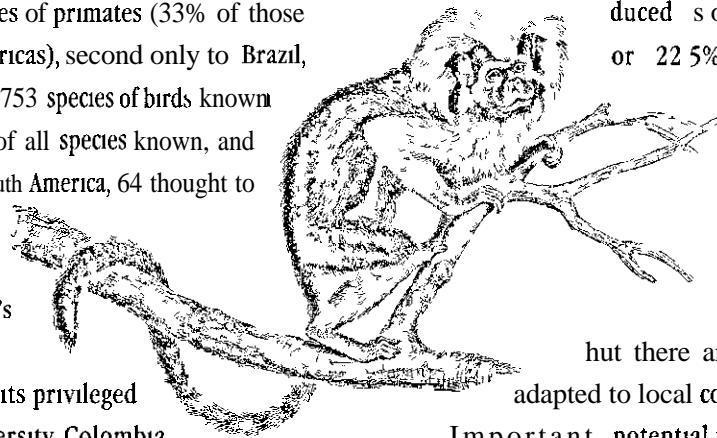
important potential in genetic improvement programs.

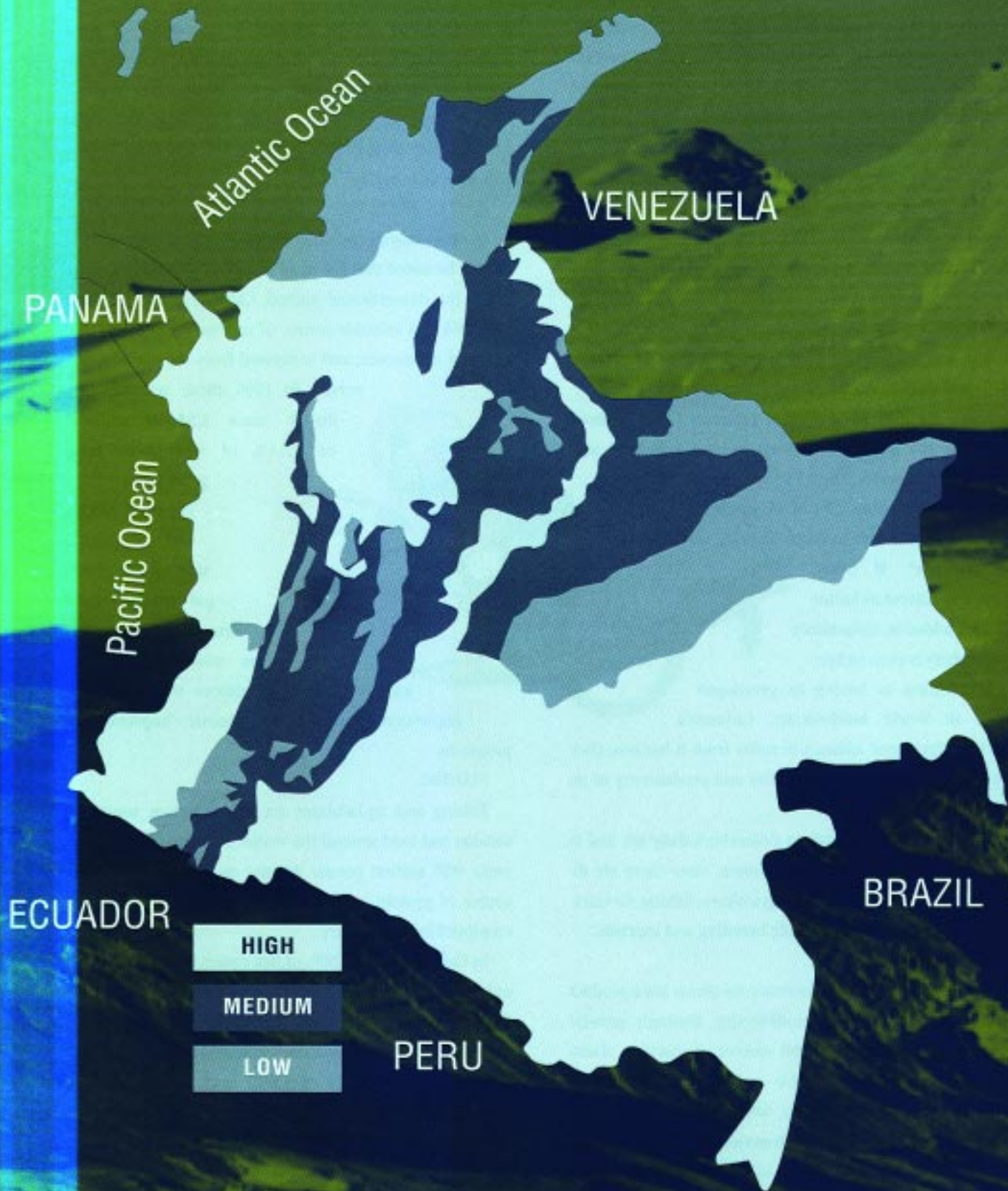
FISHING

Fishing and aquaculture are an important source of income and food around the world. Estimates suggest that some 900 million people depend on fish as their main source of protein, and that some 200 million people are employed in the industry.

In Colombia, about 80% of fish comes from the sea, and only 6% are freshwater fish. The rest are produced by fish farming. Most of the freshwater fish come from the Amazon basin (some 15,000 tons a year) followed by the Magdalena river with an average of 5,000 tons a year. Most of Colombia's salt water fish comes from the Pacific ocean (almost 91,000 tons a year). The Atlantic ocean produces some 15,000 tons a year.

In 1995, Colombia's total fish production was estimated at 167,000 tons. Exports totalled US\$228 million and imports US\$146 million. The fisheries sector represents 0.7% of GDP and 3.5% of agricultural production. Colombia has the third largest area of continental waters in the world, and this makes its fisheries a promising area of the economy⁸.





Source: Alexander von Humboldt Institute for Biodiversity Research, 1997.

WILD LIFE BREEDING

Some of the components of Colombia's biodiversity are bred in captivity in parts of the Caribbean and Pacific coasts and in the eastern plains. One example is the breeding of alligators for export of tanned skins and related products. The industry has grown, and today Colombia is the world's largest exporter of alligator skins.

WOOD

Various tree species have become essential for use as firewood, timber and paper pulp. Colombia consumes some 20 million cubic metres of wood a year, mainly as firewood and charcoal (16 mdhon) and as an industrial raw material (4 mdhon). Paper production uses some 582,000 tons, twice as much as was consumed by the industry ten years ago⁹.

FLOWERS

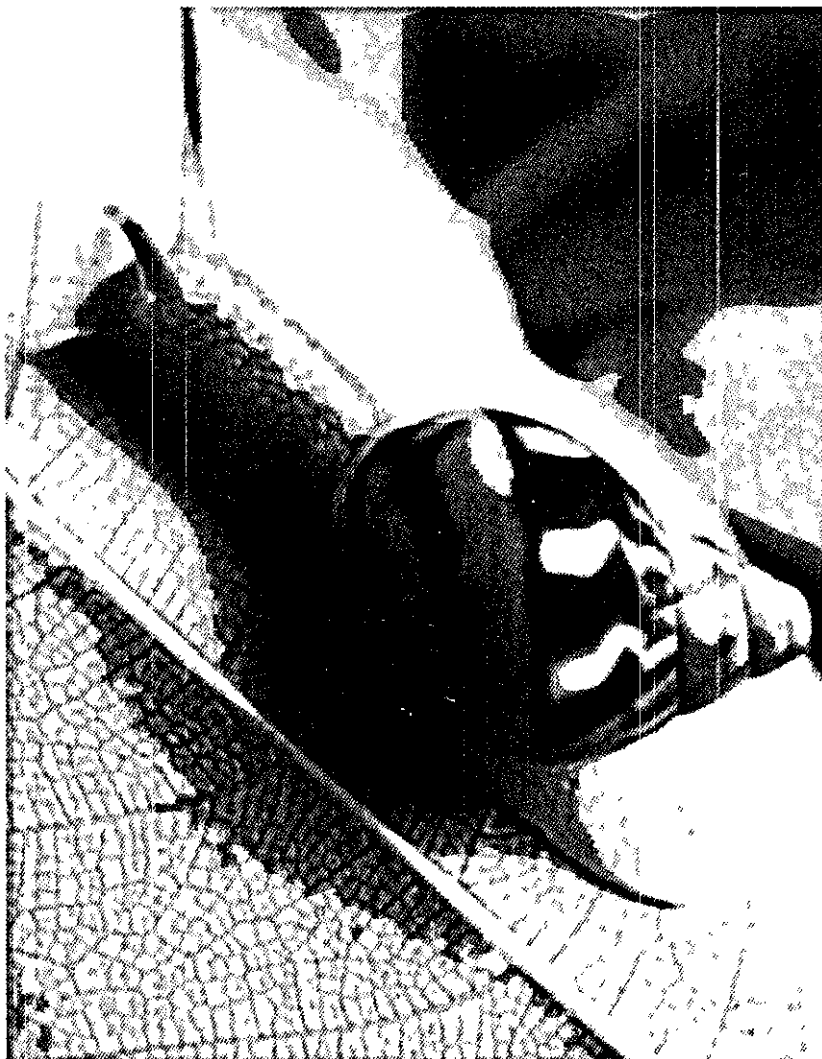
Some of Colombia's flowers are used as ornamental plants, especially orchids, Anthurium, bromelad and heliconia. Many domesticated, genetically improved species from other parts of the world, are grown in Colombia and exported, and Colombia is today the second largest exporter of cut flowers in a world market of over US\$3,500 million a year.

MEDICINE

The components of biodiversity are a vital element in medicine. It is estimated that some 20,000 species of plants around the world have traditional medicinal uses, and only 5,000 have been investigated for their potential pharmaceutical use. Today, some 120 chemical substances used in drugs come from 90 species of plant, and over 3,000 antibiotics such as penicillin and tetracycline, are derived from micro-organisms. It is estimated that some 1,400 described plants have cancer-retarding properties. This is important to a country such as Colombia, which has real and potential wealth of such plants¹⁰. As an example, Colombian scientists have developed a vaccine against malaria, *Plasmodium falciparum*, a disease that causes some two mdhon deaths every year, mostly children, and affects more than 200 mdhon people around the world¹¹.

TOURISM

Tourism has become one of the fastest growing sectors of the economies around the world. Tropical countries are especially favoured by this trend. In Colombia, there is a rising trend towards ecological tourism in natural regions such as nature parks, private reserves and unprotected natural areas. Recent research in this sector shows that in the

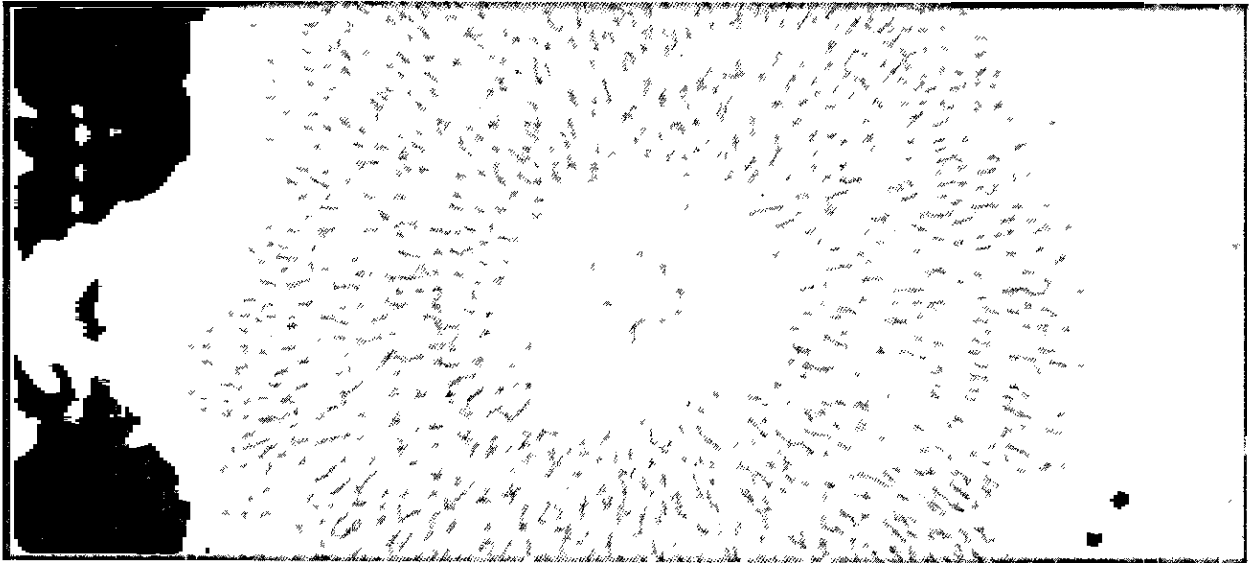


last few years an average of a mdhon tourists come to Colombia every year -about 30% for recreation- and contribute some US\$600 mdhon to the economy¹².

Since 1996, based on the General Law on Tourism¹³, that includes a provision on ecotourism in protected areas, the government, through the Ministry of the Environment, has been engaged in planning for ecotourism activities and in the definition of the carrying capacity of each protected area, under bilateral agreements with the government of Spain and multilateral agreements with the European Union, World Bank and IDB.

This is the start of a new era for tourism in the Colombian Park System, with services and infrastructure addressed to a smaller and more select public, able to pay a higher cost for the ecotourism provided in the parks.

Between 1995 and 1997 the Ministry of the Environment generated over US\$2 mdhon of tourism revenues from the visitors to 13 areas in the Parks system. They received more than one mdhon visitors in 46 areas of the system¹⁴.



This shows that in Colombia there is a growing trend for diversification away from conventional tourism and towards ecological tourism in natural regions such as the parks, which have been set up mainly to protect strategic ecosystems and the biodiversity they contain

As described before, biodiversity in its various forms of expression brings direct and indirect benefits to Colombia it is the basis of the daily life of the country, and is essential to the development of many sectors of the economy

Therefore, and as a recognition of the strategic importance of biodiversity to a country such as Colombia, the principles and foundations of our Environmental Policy hold that our biodiversity, as part of our national heritage and as interest to all mankind, should receive priority treatment in protection and sustainable use ♻️

- 1 Biodiversity Policy p 4 Ministry of the Environment DNP and Alexander von Humboldt Institute Bogota 1997
- 2 Map 2 shows the relative biodiversity of different areas in Colombia
- 3 Gran Enciclopedia de Colombia 1992
- 4 Ibid
- 5 Etter Andres Diversidad Ecosistemica en Colombia hoy from Nuestra Diversidad Biologica p 44 CEREC Fundacion Alejandro Angel Escobar Bogota 1993
- 6 Biodiversity Policy as cited p.6
- 7 Biodiversity Policy as cited p 11
- 8 Ibid
- 9 Ibid
- 10 Ibid
- 11 Promising malaria vaccine enters U S trials Biotechnology News p 6 1992
- 12 Fedesarrollo 1995 Colombian think tank for Economic Research
- 13 Law 300 of 1996
- 14 1997 Report on the Ecotourism Programme UAESPNN Ecotourism Office Ministry of the Environment



Colombia has a wide variety of plants and animals.



conservation

MAIN CAUSES OF THE LOSS OF BIODIVERSITY IN COLOMBIA



Behind the direct causes of loss of biodiversity there are a series of demographic, economic, technological, social, political and institutional events which are the principal indirect causes of loss.

The National Biodiversity Policy classifies the causes of the loss of biodiversity as “direct” and “indirect”

MAIN DIRECT CAUSES

1 Transformation of natural habitats, due to inappropriate policies for occupation and use of land, which have made the problems of colonization more acute and pushed the frontier of agriculture outwards. The transformation occurs with infrastructure and development work, illegal crops, mining, farms in natural ecosystems, the adaptation of swampland for pasture, all of which break up or destroy natural habitats

DEFORESTATION

There are no reliable statistics on the amount of forest cleared every year, nor on current trends. However, it has been estimated that one third of Colombia's primary forest has been lost, with corresponding changes to the landscape. The reasons for clearance are, in order of importance: i) 73.3% for expansion of agriculture and colonization, ii) 11.7% for timber, iii) 11% for firewood, iv) 2% by forest fires and v) 2% for illegal crops¹⁵

INFRASTRUCTURE WORK AND ROAD BUILDING

In some cases such projects accelerate deforestation and break up major ecosystems, causing degradation which is difficult to recover, as in the case of Cienaga Grande, near the city of Santa Marta, on the Caribbean coast

2 The introduction of alien and invasive species, which cause a direct loss of biodiversity by competition and displacement of native species. Displacement threatens the viability of populations and may force them into extinction. One clear example in Colombia is the introduction of *Rana castebema* (bullfrog) or *Oncorhynchus mykiss* (rainbow trout), which have displaced many native species of amphibians and fish

3 Over-exploitation or unsustainable use of wild fauna and flora for domestic or commercial purposes. This may cause genetic erosion or a reduction in the size of populations, and make species more vulnerable to extinction



4 Pollution, as a result of industrial or domestic activity. On many occasions pollution reaches levels which the ecosystem cannot tolerate. The production of solid waste and the intensive use of pesticides, fertilizers and pest control substances are a cause of loss of biodiversity and degradation, since the viability of native populations is threatened and the natural ecosystem's capacity to respond is reduced. The effects of pollution on biodiversity have not been properly quantified but the impact in Colombia as a whole may be inferred from figures of polluting activities. As one example, it is estimated that only 65% of Colombian homes have facilities for disposing of excreta in the towns, and only 27% in rural areas



Finally, climate and global changes, partly generated by pollution, may alter the conditions of the physical environment beyond the capacity of the ecosystems and their components to respond. They affect evolutionary processes and create cumulative effects.

Behind the direct causes of loss of biodiversity there are a series of demographic, economic, technological, social, political and institutional events which are the principal indirect causes of loss.

MAIN INDIRECT CAUSES

1 Lack of awareness of the strategic potential of biodiversity to maintain environmental services provided today and to make strategic use of sustainable options for use.

2 The structure of land **ownership** in highly biodiverse areas does not help conservation. In general, the affected land is used for illegal crops, colonization, timber production, mining and expansion of farmland.¹⁶

3 **Deficiencies in scientific and applied** knowledge of the conservation and sustainable use of biodiversity components. Shortcomings in technological development in Colombia make it difficult to transfer appropriate technologies to promote the sustainable use of biodiversity and the development of highly productive sectors such as pharmaceuticals and food.

4 Need for **institutional effective capacity** to reduce the impact of activities which cause loss of biodiversity. This weakness has meant that environmental legislation is often ignored and thus renewable natural resources deteriorate. Some evaluations have mentioned the effects of institutional weakness, such as in forestry, where 42% of activities are illegal.¹⁷

5 Lack of appropriate **methods** of economic and non-economic evaluation of the components of biodiversity. It is therefore easy to undervalue the strategic potential of biodiversity and this encourages the pursuit of other productive activities which do not promote conservation.

6 Defects **in the market and in economic valuation**, which do not reflect the true or potential value of biodiversity.

7 **Political violence** and waves of migration from rural areas to the towns.

8 **Inequitable and inappropriate distribution** of the **benefits** of biodiversity, which acts as an obstacle to awareness of the serious consequences of the loss of biodiversity among society in general.



In Colombia, therefore, we can point to a tendency towards the loss of biodiversity, under the threats mentioned before. Some relevant data should be cited here:

a. Of the species known in Colombia which appear in the IUCN Red List there are 30 mammals, 58 birds and 15 reptiles¹⁸.

b. The timber industry has affected significant areas of natural woodland in the Pacific and Amazon regions which are the industry's main source of supply. In 1994 it was estimated that 50% of raw materials came from the Pacific coast woodlands. It has also been calculated that timber production affects 40,000-68,000 hectares of woodland every year¹⁹.

c. As a result of over exploitation and the application of inappropriate fish-

ing techniques, the Magdalena river has lost about 78% of its production in the last 20 years –the catch being down from 78,847 tons in 1974 to 16,998 tons in 1994–. In other basins such as the Amazon and Orinoco, production has increased with the recent introduction of commercial fishing in these areas.²⁰



15 DNP 1996 Políticas de Bosques CONPES, Document 2834 Ministry of the Environment-DNP/UPA, quoted in the National Biodiversity Policy p. 16 as cited.

16 Franco, F, 1993 Dinámicas de los Sistemas de Producción Agrícola en relación al deterioro y agotamiento de los recursos agrícolas no renovables en los Andes Colombianos, Tomo I FAQ-DNP, cited in the National Biodiversity Policy, p. 20 op. cit.

17 Motta MT, 1992 Proyecto Tasas Forestales, Consultancy for DNP, cited in the National Biodiversity Policy, p. 20 op. cit.

18 IUCN Red List of Threatened Animals, cited in the National Biodiversity Policy, p. 16 op. cit.

19 DNP 1996 CONPES, National Forestry Policy Document 2834, Ministry of the Environment-DNP/UPA, cited in the National Biodiversity Policy, op. cit.

20 National Biodiversity Policy, op. cit.

Law

THE LEGAL FRAMEWORK



The Andean nations are taking steps to implement the Convention on Biological Diversity, especially with regard to the exercise of national sovereignty over their genetic resources and a fair distribution of the benefits earned from them.

In response to the processes which cause the loss and degradation of biodiversity, Colombia has since 1974 made significant advances in legislation: first, with the Renewable Natural Resources Conservation Code, and in the past decade with the new 1991 Constitution and Law 99 of 1993. These measures have been an important tool at the service of institutions and individuals alike in facing and halting the deterioration of biodiversity in Colombia.

The chart on the next page shows the general legal framework for biodiversity in Colombia. It should be noted that this is only a general outline, and this chapter makes no reference to more specific regulations on conservation and sustainable use of the components of biodiversity.

THE CONSTITUTION

The option which Colombia adopts in its new Constitution is to be a Social State Under the Rule of Law, which seeks to make fundamental rights effective not only by State action but also through social solidarity; there is thus a reciprocal relationship between rights and obligations in the Constitution. The responsibility for conservation of natural resources and for avoiding their degradation is shared between the State and the individual.

In the new Constitution, the concept of sustainable use is mentioned in some 40 Articles and the mission of the State in society is redefined. The State and individuals alike now have the duty to protect the natural and cultural wealth of the nation. The chart shows the main areas covered by the Constitution with regard to the conservation and sustainable use of biodiversity.

In relation to **renewable natural resources and cultural diversity**, the constitution recognizes and protects ethnic and cultural diversity and the ecological function of ownership. This means that people must exercise their rights of ownership within the framework, and under the principles, of sustainable development.

The Constitution requires the State and individuals to protect the natural and cultural wealth of the nation, through the strengthening of environmental education, planning on the management of natural renewable resources, and prevention and control of the adverse

effects over the environment, amongst others.

In **international terms**, the Constitution says that the State will promote the internationalization of political, economic, social and ecological relations on a basis of equity, reciprocity, national convenience, respect for self-determination, national sovereignty and the recognition

of the principles of international law accepted by Colombia and will cooperate with other countries in the protection of ecosystems in frontier areas.

With regard to **civic participation** for the defense of the collective right to a healthy environment, the Constitution provides some mechanisms for protection:

- **Action for Enforcement.** This means that anyone may apply to the courts for enforcement of the law or some official act.

- **Action for the Protection of Fundamental Rights.** This applies to individual rights such as life or health. Actions of this kind can also be brought to protect collective rights, such as the right to a healthy environment where



THE SUSTAINABLE DEVELOPMENT IN THE POLITICAL CONSTITUTION OF 1991

CONSTITUTION

Specific obligations of the state and the people, with regard to natural renewable resources and cultural diversity.

The State will promote the internationalization of political, economic, social and ecological relations on a basis of equity, reciprocity and national convenience.

Citizen participation in political, civic environmental and community affairs.

The exploitation of natural resources in indigenous reserves with no impairment of their cultural, social and economic integrity.

there is a causal link between the **collective right** (a healthy environment) and **individual fundamental rights** (life or health) which have been affected

• **Popular actions** protect collective rights and interests related to the environment, public health and public safety, amongst other things

Every citizen has a duty to participate in political, civic and community affairs, and the State has a duty to strengthen that **citizen participation**²¹ and to guarantee the participation of consumer and user organizations in the study of laws and regulations affecting them

With regard to the **exploitation** of natural resources in **indigenous reserves**, the Constitution requires that there must be no impairment of the cultural, social and economic integrity of the indigenous communities. Where decisions are to be taken on exploitation in the reserves, the government will encourage representatives of indigenous communities to participate

In conclusion, the Colombian Constitution, which is the framework of environmental law, delegates the responsibility for conservation and avoidance of degradation of natural resources under the joint responsibility of the State and the individual. It also promotes the protection of ethnic, cultural and natural diversity, civic participation in environmental management and planning for the management and sustainable use of natural resources, their use, conservation, restoration or substitution

DECREE 2811 OF 1974

Although this Decree pre-dates the Constitution and the Convention, it is worth mentioning as the response to the 1972 Stockholm Conference. It is one of the first environment codes in the Andean region, and indeed in Latin America, and it provides a general framework for environmental management, even after the passing of Law 99 of 1993. Among its purposes is the preservation and restoration of the environment, the conservation and sustainable use of renewable natural resources and the prevention and control of adverse impact on the environment and renewable natural resources

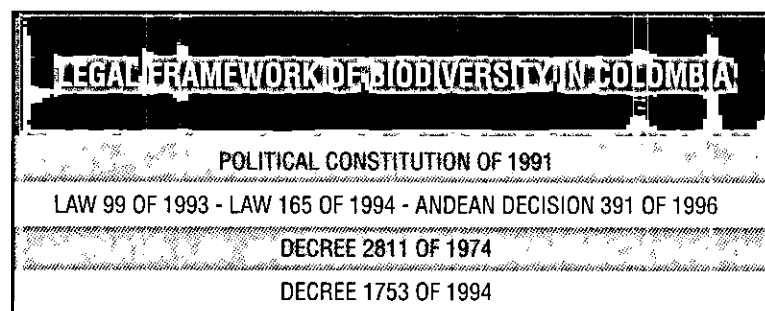
LAW 99 OF 1993

This law follows up the precepts of the Constitution and other legislation, and is a response to the commitments of the Rio Conference. It creates the Ministry of the Environment as the body responsible for the management and conservation of the environment and renewable natural resources and reorganizes the public sector apparatus res-

ponsible for the environment by decentralizing with the creation of the Regional Environmental Authorities and structuring the National Environmental System –SINA. It also raises environmental management to ministerial level, to match political importance with its strategic priority

In general terms, Law 99 states that biodiversity is part of the nation's heritage and of interest to humanity, and its protection and sustainable use is therefore a priority. Further, it says that the formulation of environmental policy will take account of the results of scientific research, without ignoring the principle of caution

Thus, Law 99 of 1993 changes and restructures the State's role in environmental management in both conceptual terms –it includes the principles and objectives agreed at Rio in 1992– and in institutional terms, with the creation of the Ministry and decentralization to the newly created Regional Environmental Authorities



DECREE 1753 OF 1994

This Decree is an instrument to give effect to the State's constitutional duty to plan the management and use of renewable natural resources in order to secure sustainable development and conservation, restoration or substitution. It regulates procedures for the obtaining of an Environmental Licence and prepares Environmental Impact Assessment Studies for different kinds of activities which might have some adverse effect on the components of biodiversity at different levels

Among the activities subject to this Decree are exploration and production of oil and gas, highway construction and infrastructure work such as dams for hydroelectric generating plants, airports, seaports and river ports, the introduction of alien breeding stock which might affect the stability of ecosystems or wildlife, the production and importation of pesticides and activities which affect the National Nature Park System

The Environmental Licence is the responsibility of the State, but its correct use requires the concurrence of various other actors in society

- Public and private enterprise, to make the environment a variable in their projects
- The community, to discover its concerns with regard to a given project at the appropriate moment, and
- The State, which is responsible for setting the parameters of impact studies for projects requiring Environmental Licences and for approving or denying the Licence after due examination of legal, economic and technical aspects of the project

INTERNATIONAL LEGAL FRAMEWORK

Colombia has ratified some 96 international treaties on the environment, which directly and indirectly affects its management of biodiversity. Amongst those treaties are the Ramsar Convention to protect swamps, the Convention on Climatic change, the International Convention on Tropical Wood, the International Convention on Plant Discoveries –UPOV–, the Convention on International Trade of Threatened Wildlife Species –CITES–, and the UN Convention on Biological Diversity, signed at the Rio Earth Summit in 1992 and ratified as Law 165 of 1994. This law provides Colombia with a general legal framework for the conservation, sustainable use and a fair distribution of the benefits derived from its use.

THE REGIONAL LEGAL FRAMEWORK

Decision 391 of 1996 of the Cartagena Agreement on the Common Regime of Access to Genetic Resources

The Rio Convention on Biological Diversity provides a general legal framework for application by individual States and internationally, but its themes required further development for ease of implementation in global, regional and national terms. One example of regional regulation is the Andean Decision 391 of 1996.

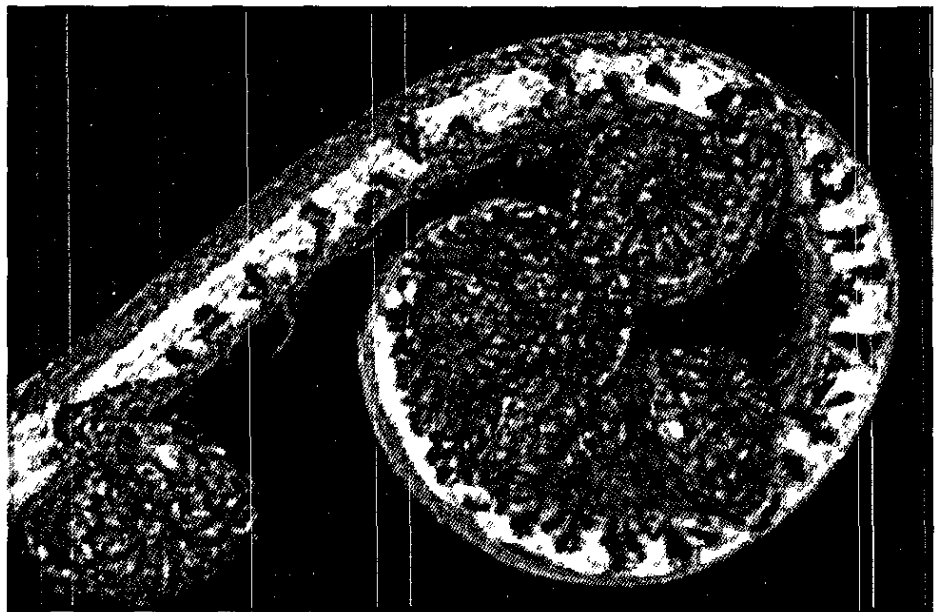
In a pioneering process –this was the first regional agreement of its kind– Colombia and the other Andean countries decided to regulate Articles 8, 9, 15 and 16 of the

Convention on Biological Diversity. In July 1996, Bolivia, Colombia, Ecuador, Peru and Venezuela approved Decision 391 as a regional legal framework governing access to genetic resources, their derivatives and their intangible components.

The Decision seeks to promote and secure a fair distribution of the benefits derived from the use of genetic resources, by products and their intangible component, and sets up the Access Contracts Mechanism for the development of such activities, with the terms and conditions to govern them.

The Decision also sets the ground rules for the recognition and evaluation of intangible components of genetic resources, especially in the case of the indigenous and black or local communities, who have the right to determine the use to which the intangible component may be put.

The Andean nations are therefore taking steps to implement the Rio Convention, especially with regard to the exercise of national sovereignty over natural resources, a fair distribution of the benefits earned from their use in the



Andean Region and appropriate conservation and sustainable use of its genetic assets.

As can be appreciated, Colombia has a wide ranging and complete legal framework which provides the basis for institutional development and restructuring, which facilitates the implementation of Article 6 of the Convention on Biological Diversity.



IV

organization

THE INSTITUTIONAL FRAMEWORK



The hierarchy of authorities in SINA starts with the Ministry, below which are the Regional Environmental Authorities or Urban Environmental Units, followed by the Departments, and finally the Municipal or City Administrations.

As mentioned in the preceding chapter, the 1991 Constitution and Law 99 of 1993 set up the general framework, for the development of the institutions and the restructuring of the environmental public sector. The achievements to date have been

DECENTRALIZATION

Decentralization of environmental management has transferred responsibilities to regional and local agencies, such as the Development Corporations, Departmental government, city and town administrations, indigenous reserves and the black communities

Decentralization has given regional and local authorities greater autonomy in the management and planning of the environment in their jurisdictions. Naturally, this autonomy is subject to the general guidelines of Law 99 of 1993, in order to secure the collective interest of a healthy environment with appropriate protection

The autonomy of the regional and local authorities in environmental management in their jurisdictions directly involves local actors, who have the specific responsibility for the protection and management of natural resources and the environment. This implements the mandate of the constitution for the State and the individual to protect the natural and cultural wealth of the nation

NEW ORDER OF ENVIRONMENTAL ENTITIES

The new Constitutional order for the environment

a) The **National Environmental Council**, created to secure the coordination of policies, plans and programmes for the environment and renewable natural resources across the public sector. The council consists of representatives of Ministries, National Planning, the People's Defender, the Comptroller General, the Departmental Governors, the Federation of Mayors, the indigenous and black communities, NGOs and production sectors such as

farming, industry, mining, forestry and exporters, amongst others

b) The **Ministry of the Environment**, whose main function is policy-making for the environment and renewable natural resources and the drafting of legislation and criteria for regulation of the environment for the use of land and adjacent seas, to secure the sustainable use of both. Its criteria will be incorporated into the policies of other sectors and in planning processes in the ministries and other agencies

Some of the functions of the new Ministry in strategic areas are i) The administration of the National Nature Parks System, ii) The granting of Environmental Licences for projects which might harm the environment and natural resources, iii) The administration of the environmental fund FONAM, and iv) Coordination of research in the organization of a national inventory of biodiversity and genetic resources, ensuring that the study, exploration and investigation of these resources respects sovereignty

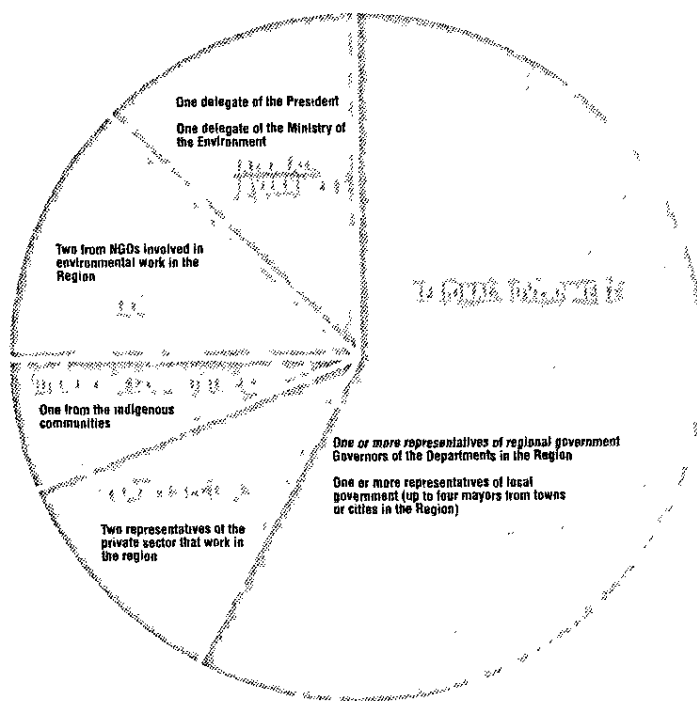
c) The **Regional Environmental Authorities -CAR-** The Corporations are the senior environmental authority in their jurisdictions, and they are responsible



for the execution of national plans, programmes and policies for the environment as defined by the law and the Ministry of the Environment. They must also coordinate the environmental actions taken by departmental and municipal authorities, and they must promote community participation in actions to protect the environment and sustainable use and grant permits, licences and other authorizations for the use of renewable natural resources or for the execution of work or other activities which might affect the environment.

Finally, local and regional representatives have an important role to play in the Boards of the Regional Corporations, which consist of one delegate of the President, one delegate of the Ministry of the Environment, one or more representatives of regional government—e.g. Governors of the Departments in the Region, one or more

LOCAL AND REGIONAL REPRESENTATIVES IN THE BOARDS OF REGIONAL ENVIRONMENTAL AUTHORITIES –CAR–



representatives of local government—up to four mayors from towns or cities in the Region, two representatives of the private sector, one from the indigenous communities, and two from NGOs involved in environmental work in the Region. Some CAR have more than two Science and Technology Institutes of SINA as members of their board.

Science and Technology Support Institutes in the SINA, who support environmental management in strategic areas such as the development and dissemination of scientific research on biodiversity and of knowledge, values and technologies in environmental and natural resources

management, of the indigenous communities and other ethnic groups in Colombia. Three of these Institutes have national coverage, and two have regional coverage. They play a vital part in the advancement of scientific knowledge for the sustainable use of biodiversity.

The institutes are

- **IDEAM**, the hydrological, meteorological and environmental study agency, obtains, analyses and disseminates basic information on hydrology, hydrogeology, meteorology and geography on aspects of biophysics, geomorphology, soils and vegetation.

- **INVEMAR**, the Jose Benito Vives de Andres marine research institute, whose main activity is environmental and natural resources research in coastal and ocean ecosystems in Colombian waters.

- **The Alexander von Humboldt Biological**

Resources Research Institute. The institute is mainly engaged in the scientific research of biotic, hydrobiological and genetic resources of flora and fauna on the mainland. It is also responsible for making a scientific inventory of biodiversity in all parts of Colombia. It has programs in the areas of i) Conservation biology, ii) Biodiversity inventory, iii) Use and valuation of biodiversity, iv) Policy and legislation on biodiversity, v) Communication and information, and vi) Training and capacity building. It also provides scientific support to the Ministry of the Environment on compliance with the commitments made in international conventions on biodiversity.

- **SINCHI**, the Amazon Scientific Research Institute is responsible for scientific study and research of the biological, social and ecological situation of the Amazon region.

- **The John von Neumann Pacific Environmental Research Institute**, responsible for scientific studies and research in the biological, social and ecological situation of the Colombian Pacific region.

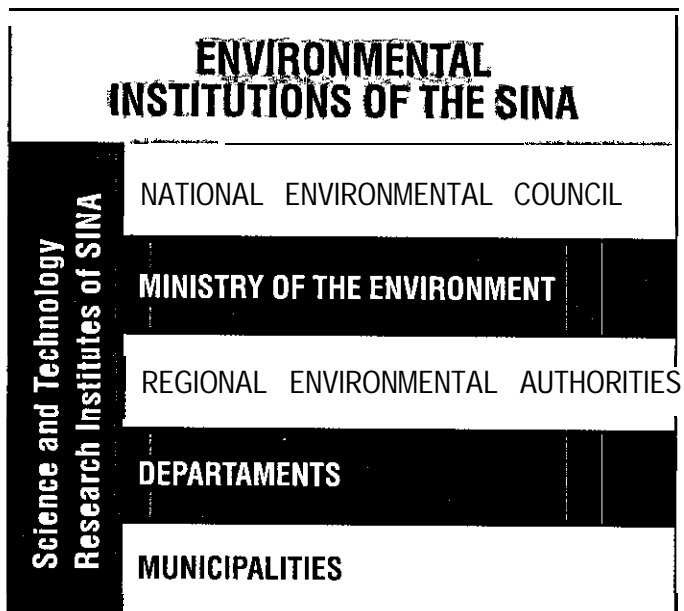
In order to coordinate environmental management and to implement the general principles of Law 99 of 1993, one of the Ministry's objectives is to set up the National Environmental System –SINA–, which consists of i) The general principles and guidelines of the Constitution, Law 99 of 1993 and environmental regulations, ii) State agencies responsible for environmental policy and action, iii)

Specific regulations on environmental matters, *iv*) Community organizations and NGOs work in the area of environmental problems, *v*) Sources of funding for the protection and management of the environment, and *vi*) public, private and mixed organizations to engage in production, information, scientific research and technological development in the area of the environment

The chart at the upper corner shows the main institutions of the Environmental National System of Colombia –SINA

The new political hierarchy in the environmental sector is a significant development, since it ensures that the Ministry of the Environment will be represented in the senior decision making bodies of the Executive, such as the Council of Ministers and the economic and social policy council –CONPES This will both make it easier to incorporate the environmental dimension into the policies, programmes and works of other sectors and help the Ministry, as the environmental authority, to control the activities of other organizations in the private and public sector of a similar standing

This situation stands in marked contrast to that of previous years, when the environmental authority, INDERENA, was an agency of the Ministry of Agriculture and Rural



Development INDERENA's scope of action was limited, and it was often overridden by other priorities in the Ministry of Agriculture

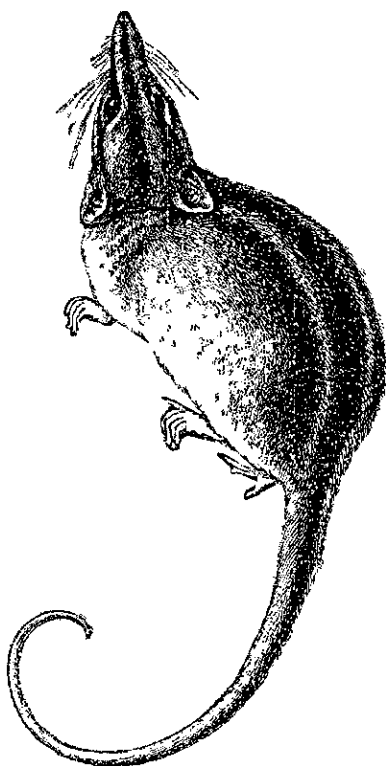
In conclusion, Colombia has made progress in the restructuring of the environmental sector, supported by a wide-ranging and stable legal framework, and this has matched the strategic importance of biodiversity with its political authority ☸



V

planning

NATIONAL BIODIVERSITY POLICY



The National Biodiversity Policy seeks to promote conservation, knowledge and sustainable use of biodiversity and fair distribution of the benefits derived from the use of its components, and of knowledge, innovations and practices associated with it, provided by the Colombian scientific community, industry and local community.

The National Biodiversity Policy is a step forward on the long road mapped by the Convention on Biological Diversity for conservation and sustainable development of the environment. This policy sets out guidelines for the actions of the various agencies of SINA, but, most importantly, declares that sustainable use and conservation of biodiversity is a long term policy and one which cuts across other sectors in coordinating and shaping policy to a common end to meet the priorities of the National Biodiversity Policy and the Convention.

As explained earlier, the 1991 Constitution introduces a series of elements relevant to the management of the components of biodiversity, and provides a political and legal framework for the implementation of plans, programmes, policies and regulations in the sector.

Following the mandate of the Constitution and the commitments made at Rio in **1992**, including the Convention on Biological Diversity, the government created The New Constitutional Order for the Environment and its Steering Committee for the Formulation of a National Biodiversity Strategy²² in June **1993**, as a first step in the implementation of the Convention.

Later, Congress ratified the Convention in Law 165 of 1994 as the general legal framework for the implementation of the Convention on Biological Diversity in Colombia, and promoted the drafting of a National Biodiversity Policy, as required by Article **6** of the Convention.

For this process, there was debate and consultation on what the general lines of the Policy should be. Over 200



participants were involved from governments agencies, the local scientific community, NGOs, indigenous and black communities After a number of meetings, the objectives and strategies of the Policy were debated and agreed

In November 1995, the National Environmental Council approved the general lines of the Policy, which were then set down in a document prepared by National Planning Department, the Ministry of the Environment and the Alexander von Humboldt Institute

The National Biodiversity Policy was published in March 1997 It develops the principles and objectives of the Convention by seeking to promote conservation, knowledge and sustainable use of biodiversity and a fair distribution of the benefits derived from the use of its components, and of knowledge, innovations and practices associated with it, provided by the Colombian scientific community, industry and the local community

The National Biodiversity Policy calls for work to be done in three main areas

CONSERVATION OF THE COMPONENTS OF BIODIVERSITY, including *i*) The strengthening and consolidation of the National Protected Areas System SINAP, *ii*) A reduction in the activities which cause deterioration of biodiversity, such as the transformation of habitats, the introduction of invasive species and the transplanting of species from one ecosystem to another, over-exploitation and pollution, and *iii*) The promotion of restoration of degraded ecosystems and threatened species

GREATER KNOWLEDGE OF BIODIVERSITY, through *i*) The scientific characterization of its components, and *ii*) The recovery and dissemination of traditional knowledge and practices

THE PROMOTION OF SUSTAINABLE USE OF BIODIVERSITY AND THE DISTRIBUTION OF BENEFITS OF THAT USE, by *i*) The promotion of systems of sustainable management of biodiversity, *ii*) The strengthening and promotion of genetic banks and biotechnological programmes, *iii*) The design and implementation of systems of valuation of the elements of biodiversity, applying multiple criteria, and of fair distribution of the benefits earned, and *iv*) Sustainable development of the economic potential of biodiversity

The Policy provides a set of instruments to help implementation and incorporation as necessary into the plans, programmes and policies of the sector and other sectors

These instruments are

- **Training, education and dissemination**, in order to create public awareness of the strategic value of biodiversity

- **Citizen participation**, with mechanisms to be developed and applied by the public to become actively involved in the implementation of the Policy

- **Legislation**, based on an analysis of existing legislation on biodiversity, in order to clarify the areas of competency of the organizations involved in conservation and sustainable management, and to detect gaps in different areas of legislation covered by the Convention and the Policy

- **Institutional Development**, through strengthening of the entities in SINA, especially in aspects of planning, designing and executing projects for research, conservation and sustainable use of biodiversity

- **Incentives** for each strategy in the Policy, taking account of regional, economic and social criteria Incentives should aim to encourage conservation and sustainable use of the components of biodiversity, and to discourage transformation or degradation

*Development and transfer of **technologies**, as required, to encourage research in the area of conservation and sustainable use of biodiversity Mechanisms will be provided to facilitate access to leading-edge technologies by research organizations so that new knowledge of Colombian biodiversity can be more easily generated, validated and disseminated

- **The establishment of information systems on biodiversity**, through which information on the components of biodiversity in Colombia will be brought together The systems will be based on scientific research and community research, and on information available in local and foreign biological collections The biodiversity information system will include the identification, compilation, evaluation and synthesis of the base of Colombian scientific and technological knowledge and traditional knowledge of biodiversity

- **Funding** For the implementation of the Policy, there will be funding from international cooperation, the national budget, projects related to conservation and sustainable use of biodiversity through FONAM and from ECOFONDO, which supports NGO projects

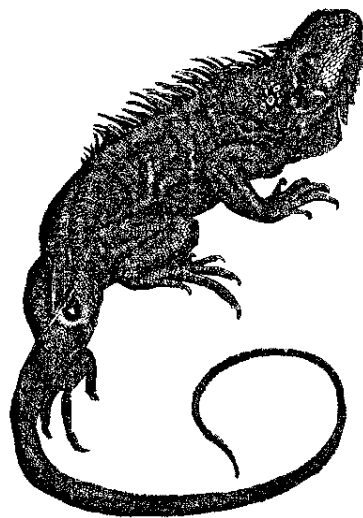


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VI

strategy

DEVELOPMENT OF THE NATIONAL BIODIVERSITY POLICY



The INSEB report is a baseline for the evaluation of the state of scientific knowledge of biodiversity in Colombia. It will identify research priorities and set up a system of indicators to follow up the situation of biodiversity.

Following Article 6 of the Convention, Colombia's Ministry of the Environment and Alexander von Humboldt Institute have been conducting two vitally important processes in biodiversity: the National Biodiversity Strategy and its Plan of Action -ENBPA- and the National Report on the Situation of Biodiversity in Colombia -INSEB-

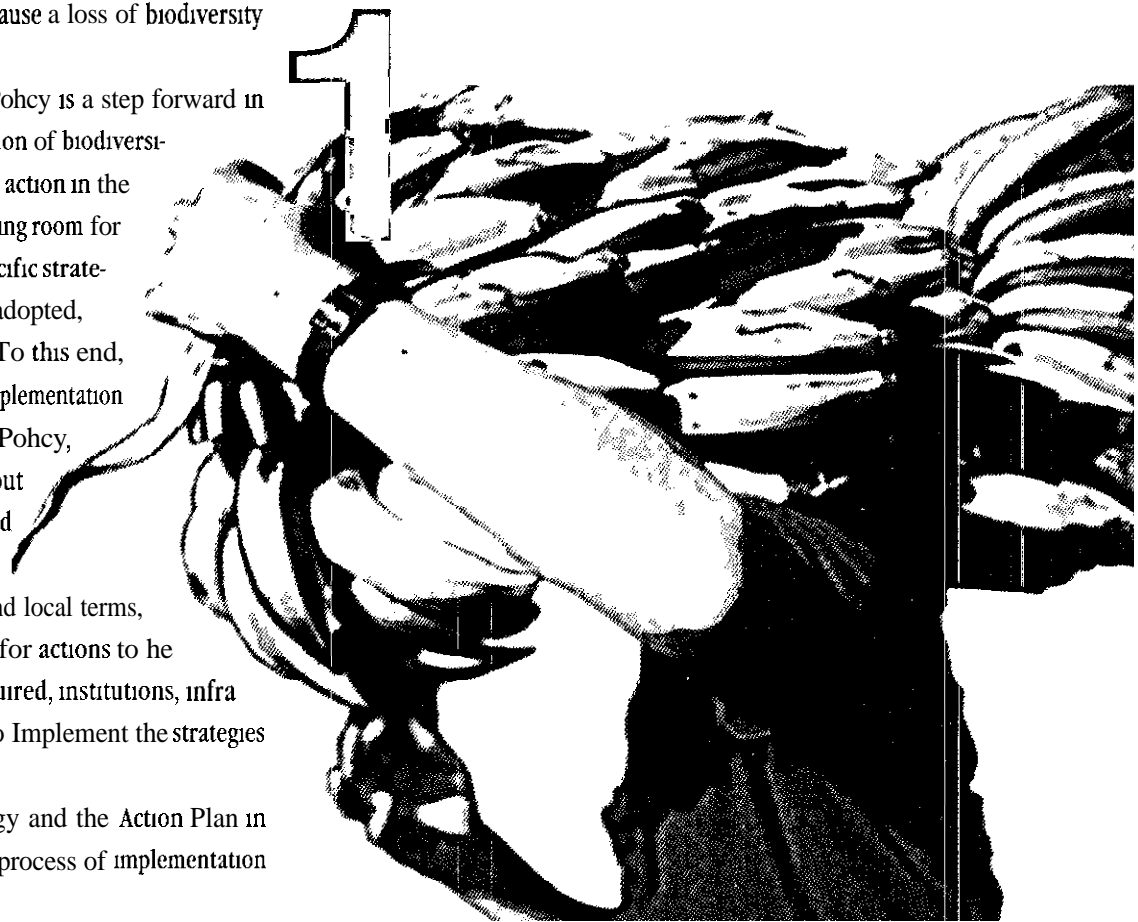
THE NATIONAL BIODIVERSITY STRATEGY AND ITS PLAN OF ACTION —ENBPA—

If conservation and sustainable use of biodiversity is to be achieved, it is important that the principles and objectives of the Convention and the National Policy be incorporated into the policies, plans and programmes of all sectors, so that processes which cause a loss of biodiversity will be avoided.

The National Biodiversity Policy is a step forward in planning the use and conservation of biodiversity; it proposes a framework of action in the longer and medium terms, leaving room for the development of more specific strategies in a plan of action to be adopted, once the strategy is designed. To this end, and as part of the process of implementation of the National Biodiversity Policy, Colombia is currently working out the Strategy to be implemented by the Plan of Action, which will identify and define in national and local terms, those who will be responsible for actions to be taken, human resources required, institutions, infrastructure and funds required to implement the strategies and instruments of the Policy.

Work began on the Strategy and the Action Plan in November 1997, as part of the process of implementation

of the Policy. The Strategy is being drawn up by groups of experts for the identification and organization of priorities for action in each area of the policy. Consultations are being held to encourage constructive dialogue between the environmental authorities and the public, to secure that there is a common understanding of the scope of the Strategy, and to develop a awareness of shared responsibility for the implementation of the Policy. The groups of experts will cover all the areas of the Policy and include representatives of the public and private sector involved in decision making, decentralized State agencies, scientific research organizations, NGOs, the indigenous and black communities and local groups.



The recommendations of the groups of experts will be compiled as a technical document by the Alexander von Humboldt Institute. Based on that document, the Ministry will then start a process of consultation and political negotiation at national level. The final Strategy document will then be prepared for submission to the National Environmental Council for approval²³.

NATIONAL REPORT ON THE STATE OF BIODIVERSITY —INSEB—

The report is a baseline for the evaluation of the state of scientific knowledge of biodiversity in Colombia. It will identify research priorities and set up a system of indicators to follow up the situation of biodiversity, so that measures can be taken to respond to any problems identified. It will thus be an important input for the Strategy.

Work began on the Report in November 1996 as the first of a series of regular reports for ongoing follow-up of the situation of biodiversity in Colombia. Some 55 specialists in different areas have produced this Report with 37 case studies and all secondary information about biodiversity available in the country. This initiative was made possible through UNEP-GEF funding and administrative support from the UNDP Office in Bogota.

The direction and coordination of the Report is the responsibility of the Alexander von Humboldt Institute, and a number of other public and private organizations took part, such as Colciencias, Corpoica, Invenmar, Universidad Javeriana and the civil society reserve network, amongst others.

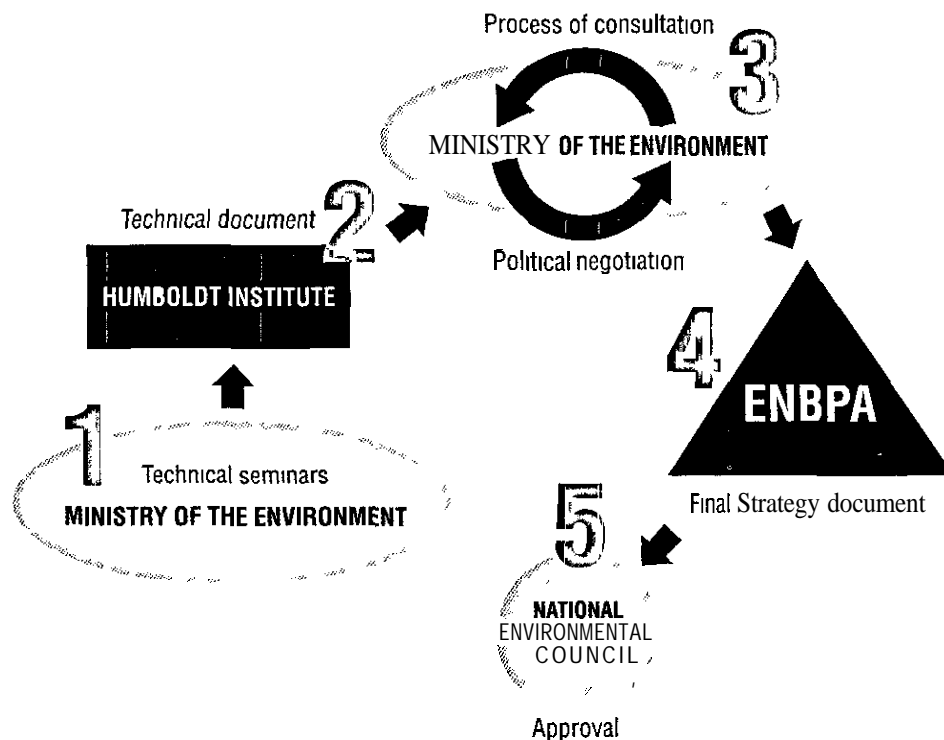
The Report is divided in three parts. The first characterizes biodiversity at the level of ecosystems and by species, mainly related to endemic species or those in some degree exposed to threats.

The second section analyzes available information on the direct and indirect causes of loss of biodiversity. The Report reflects the relative lack of available information on the causes of loss, and suggests some topics which need more detailed study in the short term.

The third section takes as its reference point the structure of the Policy, and provides information on the national capability in conservation *in situ* and *ex situ*, knowledge and research, and the sustainable use of biodiversity in Colombia.

²³ This process will be undertaken in 1998.

PROCESS OF CONSULTATION AND DRAFTING OF THE STRATEGY

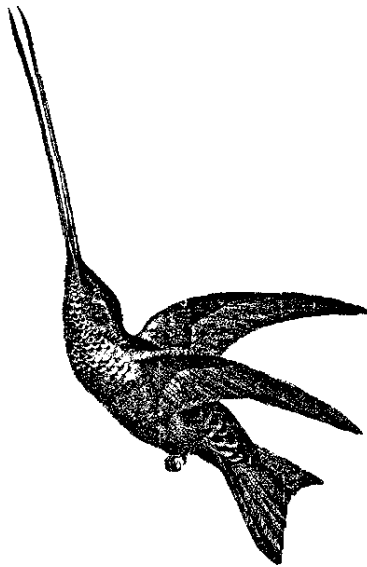




VII

Life

GENERAL MEASURES ADOPTED FOR THE CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY



Colombia has applied a legal framework, and has taken specific action to facilitate the development and transfer of technologies in some sectors directly and indirectly related to the sustainable management of biodiversity.

The National Report on the Situation of Biodiversity –INSEB– and the National Biodiversity Strategy and its Plan of Action –ENBPA– are the logical results of the implementation of the Convention and the Policy

Since the introduction of the 1991 Constitution, Colombia has reasserted its interest and duty to adopt measures for conservation, protection and sustainable development of our biological and cultural heritage. During the 1990s a number of general measures have been taken in relation to some terms of the Convention in order to complement and facilitate its process of implementation at national level.

Colombia is aware of the need to incorporate biodiversity into its social and economic processes in the interest of sustainable development. Biodiversity, according to the Convention of Biological Diversity, the Constitution of 1991 and Law 99 of 1993, is an important part of our national heritage and it is of interest to all mankind and should be sustainably protected and used.

This chapter offers a brief description of the general measures adopted for the encouragement of conservation and sustainable use of biodiversity, and its incorporation into sector and intersectoral plans, programmes and policies.

LEGISLATION

As required by Articles 8 and 10 of the Convention²⁴, Colombia has developed a set of legal instruments to facilitate the management of biodiversity at national level.

We take as examples only a few of the new provisions of law regarding conservation, knowledge and sustainable use of biodiversity.

The new regulations develop the general framework of law described in Section III of this document, and shows that Colombia has a number of legal instruments to make implementation of the National Biodiversity Policy, and

hence the Convention, easier, and to be available as tools for this purpose.

These legal instruments embody the idea of sustainable development and form an important part of the tools used by the environmental authorities. If these tools were not available, the authorities would not be able to perform their functions which are largely focused on working for the objectives of the Convention and Policy.

1 Important achievements in conservation

THE STRENGTHENING OF THE NATIONAL PROTECTED AREAS SYSTEM –SINAP

The National Nature Parks System has 46 natural areas registered: 2 National Nature Reserves, 34 Nature Parks, 8 Flora and Fauna Sanctuaries and one Unique Natural Area, totalling 9,045,403.6 hectares, about 8% of Colombia's land area. In the last five years two new nature parks have been expanded²⁵, three new flora and fauna sanctuaries have been demarcated²⁶ and one new Nature Park added²⁷. The areas of the new additions to the System total 163,871 hectares²⁸.

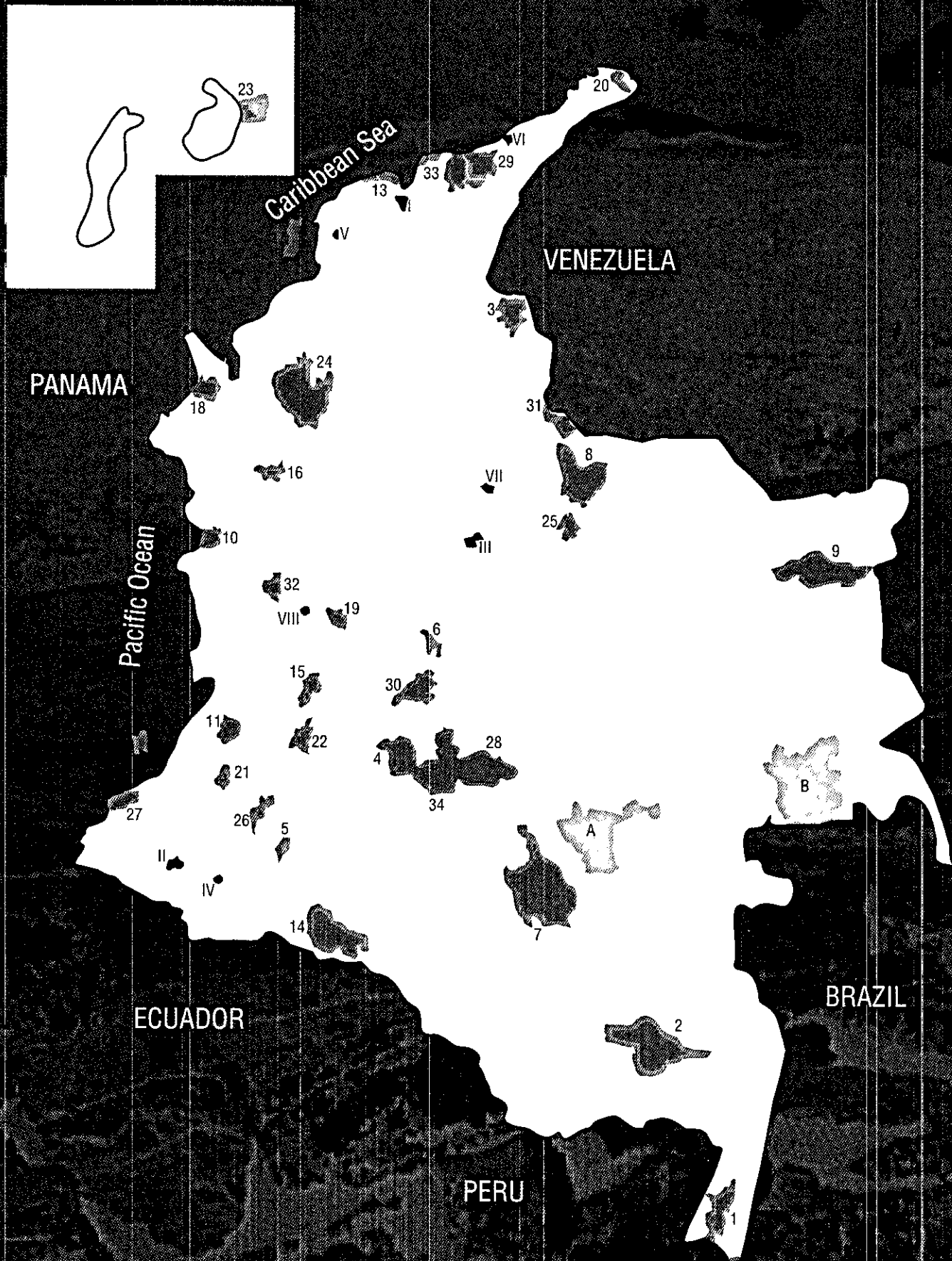
The following is the administrative organization of the Nature Parks System.

• **The Nature Parks System**²⁹ The System is composed of a set of areas of exceptional value to the national heritage which, for the benefits of the whole population and due to their natural, historical or cultural characteristics, are reserved under one or another of the categories in the System. The System seeks to conserve and perpetuate outstanding values of flora, fauna, landscape or historic remains, maintain biodiversity and secure the ecological stability of ecosystems, as regulated in Decree 622 of 1997.

The Special Administrative Unit for the Nature Parks System –UEASPNN– is a technical, operative and executive agency for Ministry policy responsible for the administration of the System, as restructured by Decree 2915 of 1994.

The following are some of the legal classifications given to protected areas, in order to strengthen SINAP.

AREAS OF THE NATURE NATIONAL PARK SYSTEM



Source: Map of the Nature Park System Areas, UAESPNN, Ministry of the Environment, 1997.

• **Integrated Management Districts**, defined as areas of the biosphere which for environmental or socio-economic reasons are demarcated for organization planning and regulation of the use and management of renewable natural resources and economic activities there, applying the criteria of sustainable development. These districts may be used for the preservation, protection, production or recovery of ecosystems within them, as regulated by Decree 1753 of 1994.

• **Protective forest areas**, woodlands of general interest and forestry reserves. This protects a significant portion of forestry reserves used as a source of water supplies in a number of municipal districts, under Law 2 of 1959 and Decree 2811 of 1974.

• **Private Nature Reserves**. The Ministry is currently working on the regulation of Articles 109 and 110 of Law 99 of 1993 regarding the establishment, maintenance and requirements for these Reserves. This category is particularly important since the community plays a direct part in the conservation of biodiversity. The purpose of this type of reserve is to support the conservation efforts on private property made towards examples of natural ecosystems which have been intervened little or not at all, and have been sustainably managed.

• **Natural Areas for Special Management –NASM–**

These areas are established to protect the natural wealth of a certain area. In December of 1996 the Ministry of the Environment declared as a Natural Area for Special Management the coral reefs of the archipelago of San Andres, Providence and Santa Catalina, in the Caribbean sea.

REDUCTION OF PROCESSES AND ACTIVITIES WHICH CAUSE DETERIORATION AND LOSS OF BIODIVERSITY

The following measures have been taken³⁰

• **Environmental Licences and Environmental Impact Assessments** are now required for projects, works and other activities which might have an adverse effect on renewable natural resources (Decree 1753 of 1994).

This is a planning instrument which introduces environmental variables into decision-making and attempts to solve the dilemma of development vs conservation, as well as to defend the collective rights of the community.

***Control and supervision of animal and plant health** and health products, animal genetic materials and seeds for sowing, by the agricultural authority ICA. Supervise animal and plant health and epidemiology in order to prevent, control and manage pests or other harm-

NATURE PARKS

- 1 AMACAYACU
- 2 CAHUINARI
- 3 CATATUMBO BARI
- 4 CORD LOS PICACHOS
- 5 CUEVA DE LOS GUACHAROS
- 6 CHINGAZA
- 7 CHIRIBIQUETE
- 8 EL COCUY
- 9 EL TUPARRO
- 10 ENSENADA DE UTRIA
- 11 FARALLONES DE CALI
- 12 GORGONA
- 13 ISLA DE SALAMANCA
- 14 LA PAYA
- 15 LASHERMOSAS
- 16 LAS ORQUIDEAS
- 17 CORALES DEL ROSARIO
- 18 LOS KATIOS
- 19 LOS NEVADOS
- 20 MACUIRA
- 21 MUNCHIQUE
- 22 NEVADO DEL HUILA
- 23 OLD PROVIDENCE
- 24 PARAMILLO
- 25 PISBA
- 26 PURACE
- 27 SANQUIANGA
- 28 SERRANIA DE LA MACARENA
- 29 SIERRA NEVADA DE TAMARITA
- 30 SUMAPAZ
- 31 TAMA
- 32 TATAMA
- 33 TAYRONA
- 34 TINIGUA

SANCTUARIES OF FLORA AND FAUNA

- I CIENAGA GRANDE DE SANTA MARTA
- II GALERAS
- III IGUAQUE
- IV ISLA DE LA COROTA
- V LOS COLORADOS
- VI LOS FLAMENCOS
- VII GUANENTA ALTO-ALTO RIO FONCE
- VIII OTUN QUIMBAYA

NATIONAL NATURE RESERVES

- A NUKAK
- B PUI NAWAI

NATURAL AREA FOR SPECIAL MANAGEMENT

CORAL REEFS OF THE ARCHIPELAGO OF SAN ANDRES, PROVIDENCE AND SANTA CATALINA

ful organisms which do or may affect plants, animals and their products, in continuous harmony with the protection of natural resources Regulated by Decree 1840 of 1994

- **Control of pollution** caused by domestic and industrial atmospheric emissions and the generation of noise and odours The intention is to persuade industry and the household to adopt cleaner technologies which will progressively favour the decontamination of the environment and a reduction of polluting waste Decree 948 of 1995

- **Temporary prohibitions to prevent forest fires** These are temporary measures to combat the critical period of drought which has affected Colombia since 1997, and is forecast to continue through 1998 The drought provides all the conditions for a proliferation of forest fires which are a serious threat to Colombian ecosystems The prohibitions appear in Decrees 2340 of 1997 and 2143 of 1997

- **Certificate of Forestry Incentive for the Conservation of woodland ecosystems** which have been intervened little or not all Incentives are used to stimulate the protection and conservation of the different natural areas found in Colombia Decree 900 of 1997

RESTORATION OF DEGRADED ECOSYSTEMS AND THREATENED SPECIES

- **The Statute for the Protection of Animals**, which bans the hunting of wild animals nation-wide, except for scientific or research purposes Law 84 of 1989

- **Reforestation Certificates —CIF—**, an incentive to promote the establishment and maintenance of forests for protection or production Regulated by Law 139 of 1994 and its Regulatory Decree 1824 of 1994

- **Botanical Gardens and other ex situ conservation centres**, regulated by Law 299 of 1996 to protect flora and regulate the activities of the botanical gardens, and Decree 331 of 1998 which regulates Law 299 of 1996 with regard to the incentives and prerogatives of the botanical gardens In addition to being an incentive to start botanical gardens, the Decree also offers mechanisms to control their activities



2 Greater knowledge of biodiversity

THE FOLLOWING MEASURES HAVE BEEN TAKEN

- **The Wild Fauna Statute**, regulating all aspects of scientific research on wild animals Decree 1608 of 1978

- **The Wild Flora Statute**, regulating scientific research into wild flora Order 33 of 1978

- **The Science and Technology Law —S&T—** (Law 29 of 1990) created the National Science and Technology System and uses the National science and Technology Council to promote the incorporation of S&T into economic and social development plans and programmes and the formulation of medium and long term S&T plans

- **The encouragement of scientific research and technological development** through projects and complementary activities of public and private organisations The National S&T System has national programmes for Science and Technology in different areas, including farming, the environment and habitat Decree 585 of 1991, regulating Law 29 of 1990

- **The reorganization of the Science and Technology Research Agency Colciencias**, which promotes and funds research projects in various areas such as the environment and habitat Decree 2934 of 1994, regulating Law 29 of 1990

- **The Scientific Research Institutes** of the Ministry of the Environment, as described earlier IDEAM³¹, INVERMAR³², Alexander von Humboldt³³, SINCHI³⁴, and the John von Neumann Institute³⁵

TRADITIONAL KNOWLEDGE, ESPECIALLY ARTICLES 12 AND 8 J OF THE CONVENTION

The following measures have been taken

- **The National Commission** for the **Indigenous Territories** and the **Standing Commission** for Indigenous Concertation, whose functions amongst others are biodiversity and genetic resources in indigenous reserves and the collective intellectual property of knowledge associated with that biodiversity Decree 1397 of 1996

- . **Special regime** for **Afro-Colombian communities**, which are general measures for the protection of black culture and the black communities' lands Law 70 of 1993 and Decree 1745 of 1995

- . **Special regime** for the protection of **indigenous peoples**, **their cultures** and **their lands** Law 21 of 1991, also ratifying ILO Convention 169

- **Andean Decision** 391 of the **Cartagena Agreement**, adopting a common regime on access to genetic resources This regional Decision protects access to the intangible component by the incorporation of a supplement to the contract of access with conditions governing the activities under it

Transitory Article 8 gives the basis for the adoption of a special regime by the Andean countries, intended to strengthen the protection of traditional knowledge, innovations and practices among the indigenous, Afro-Colombian and local communities in accordance with the terms of the Decision, International Labor Organization –ILO– Convention 169 and the Convention on Biodiversity

3 Sustainable use

THERE ARE A NUMBER OF INSTRUMENTS FOR THE CONTROL AND PROMOTION OF SUSTAINABLE USE OF RENEWABLE NATURAL RESOURCES SOME OF THEM ARE

- . **Regime** for Forestry and Wild Flora (Decree 1791 of 1996)

- **The Wild Fauna Statute**, regulating hunting and the management and "use of wild animals Decree 1608 of 1978

- **The Water Regulations**, which adopts measures for the administration of fresh water, regulates "use and the treatment of liquid waste in order to ensure that water resources are preserved and permanently available Decrees 1541 of 1978, 1594 of 1984 and 901 of 1997

- **Fishing Regulations**, to regulate fishing in the sea and in continental waters, and aquaculture Decree 2256 of 1991, regulating Law 13 of 1990

- . **Environmental Licences** and **Environmental Impact Assessments** Decree 1753 of 1994

- **The Convention on International Trade** of threatened **species of wild** flora and fauna -CITES-, ratified by Law 17 of 1981 and regulatory Decree 1401 of 1997 giving the Ministry specific functions as the administrative authority of the Convention for Colombia, and Decree 1420 of 1997 naming the Colombian scientific authorities responsible under the Convention

- **Procedure** for the **granting of permits** and **authorizations** under the CITES Convention Res 573 of 1997

- *Measures to set up **minimum** controls to secure the **sustainability** of mangrove ecosystems and **neighbouring** areas Resolution 1602 of 1996 and Resolution 257 of 1997

- *Ports **authorized** for **international trade in wild animals** and plants Decree 2967 of 1997

Finally, with regard to the strengthening of the biotechnology programmes, Law 29 of 1990 and its regulatory Decrees, as explained earlier, promote scientific research in different fields, including the environment and habitat

INCENTIVES

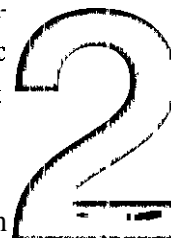
In accordance with Article 11 of the Convention on Biodiversity³⁶ Colombia has worked out a number of incentives, which we now describe

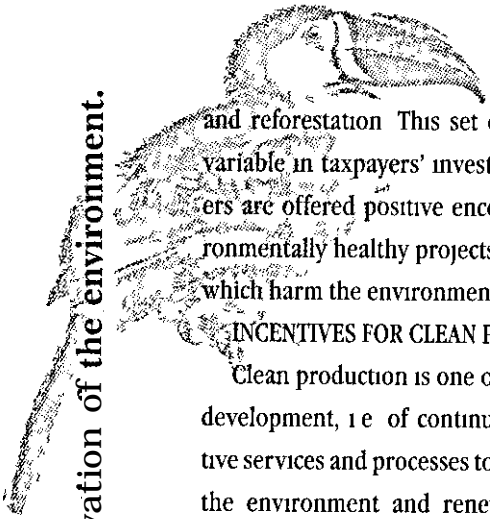
The last section of Law 99 of 1993 says that the President will exercise his powers under the constitution and the law to establish a regime of incentives, including economic incentives, for the appropriate "use of the environment and of renewable natural resources, and for the recovery and conservation of ecosystems by private owners

The Ministry has been working on this mandate, by disseminating a series of tax benefits to promote investment in and reconversion of the environment Some successes have already been recorded, both in the application of tax incentives to investment in the environment and in research on valuation and on the design of economic policies for the local management of ecosystems in Colombia

1 Tax incentives for environmental investment

There are a number of tax incentives to stimulate investment in the adoption of clean technologies, the conservation of strategic ecosystems, reforestation and conservation, amongst others The incentives are designed to achieve the objectives of the National Environmental Policy, specifically its programmes for clean production, the protection of strategic ecosystems and biodiversity,





and reforestation. This set of incentives is an important variable in taxpayers' investment decisions, since taxpayers are offered positive encouragement to invest in environmentally healthy projects, and discouraged from those which harm the environment³⁷

INCENTIVES FOR CLEAN PRODUCTION

Clean production is one of the strategies of sustainable development, i.e. of continuous improvement in productive services and processes to reduce the adverse effects on the environment and renewable natural resources. To improve businesses in terms of competitive position—to improve their performance in using and transforming resources and facilitating a reduction in the generation of all kinds of waste (toxic and inert)

Based on this, the Policy seeks to introduce instruments such as penalty charges for certain types of discharge which will lead to environment ally-favourable goals at the lowest possible cost to the economy and to the sector regulated

Among the incentives for clean production, the new Tax Statute provides for the following

- **VAT exemption for environmental investment** Purchases of equipment to monitor, control and follow up the requirements of environmental law are not subject to value-added tax

- **VAT exemption on imported equipment** not produced in Colombia, for processing or recycling waste, treatment of waste water, atmospheric emissions, solid waste and recovery of rivers, and equipment for compliance with the Montreal Protocol, which committed Colombia and its industries to reduce gases which affect the ozone layer

- **Exemptions for gas and household services** VAT exemptions have been introduced to encourage the use of gas, which costs less to produce than other hydrocarbon fuels and does less harm to the environment

- **Incentives for the control of atmospheric emissions from mobile sources** Mobile sources are responsible for about 60% of air pollution, and a tax incentive allows 50% of the value of environmental control equipment installed to be deducted from the VAT due on the vehicle³⁸

- **Incentives to purchase property with ecological functions** The cost of conservation of ecosystems through tax incentives such as that described below is much lower than that of restoration when damage has already been done

The Ministry believes that it would be more efficient to encourage the private sector to engage in conservation instead of assuming the high cost of restoration itself³⁹

The incentive is that private individuals should be encouraged to sell their property with ecological functions to the State or to mixed organizations in which the state has a majority, in rural, urban or suburban areas which help to protect the environment and renewable natural resources in general, as well as the conservation and recovery of strategic ecosystems and the sources of town water supplies⁴⁰

INCENTIVES FOR FORESTRY

- **The Forestry Certificate**—CIF— for reforestation

Law 139 of 1994 and its regulatory Decree 1824 of 1994 regulate the Forestry Certificate

The Certificate expresses the intention that the government will reimburse reforestation in cash to cover part of the expense of planting and maintenance of new commercial or protective/productive plantations⁴¹. The investor must apply to the Regional Environmental Authority for the CIF

The CIF covers all new forestry projects implemented in areas suited to the growing of trees and intended to use native and introduced species mainly for timber, and other products such as essential oils, latex, resin and gum

The CIF is funded by the national budget, decentralized agencies, fines, transfers of all kinds by public entities, domestic and foreign loans and international cooperation. Together, these funds form the Forestry Incentive fund created by decree 1824 of 1994⁴²

- **CIF for woodland conservation**

This version of the CIF follows Law 139 of 1994 and Art 250 of the tax reforms of Law 223 of 1995. It was then regulated by Decree 900 of April 1, 1997⁴³

This law marks an advance in the development of economic instruments for environmental management in Colombia, as well as an advance in implementing the principles of Law 99 of 1993

The Conservation-CIF compensates the direct and other costs of an owner who conserves natural woodland ecosystems on his property which have been intervened little, or not at all. The owner applies to his Regional Environmental Authority to qualify for the incentive

The Conservation CIF is usually granted to those owning areas of natural forest which have not been intervened or only slightly intervened in areas which are

. Located 2,500m above sea level

- Forest with only primary and secondary vegetation round the edge of water sources and swamps

- Forest in national or regional nature parks, registered as owners prior to the declaration of the area as a Nature Park and in compliance with the law for the management of the area, and

- *Forest in basins which are the sources of local water supplies

Areas owned by the State do not receive benefits of this kind Nor do areas which the law requires to be conserved as natural woodland The local environmental authority must report the granting of Conservation CIF for areas within the Parks System⁴⁴ A Conservation CIF may only be granted for areas up to 50 hectares of woodland

So far, there have been Conservation CIF applications for some US\$3 million around the country The Ministry of the Environment has set some priority areas for consideration, notably the Andes massif which is the source of the major rivers –Magdalena and Cauca

The Ministry has designed a series of operating manuals and has organized induction workshops for the Regional Environmental Authorities responsible for the application and execution of the incentive

The Ministry has also taken the initiative to diversify the sources of funding to pay for the Conservation CIF There are at present some \$900 million (US\$600,000) available for 1998, a sum which it is hoped will increase once the incentive has been taken up by taxpayers⁴⁵

INCENTIVES FOR DONATIONS TO ENVIRONMENTAL AND SCIENTIFIC RESEARCH INSTITUTIONS⁴⁶

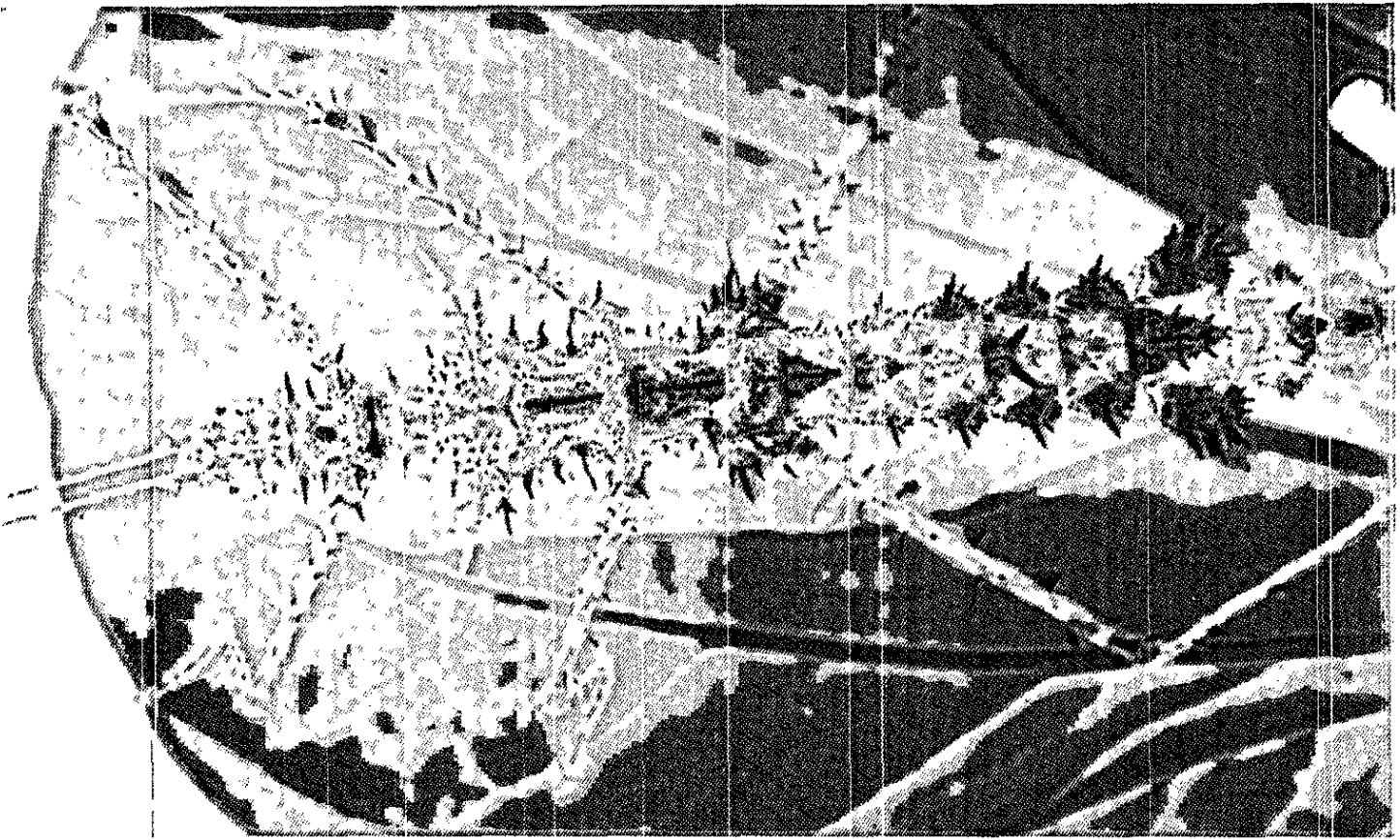
The private and mixed sectors are encouraged to make donations to research institutes which work for the Ministry The incentives are expressed in terms of investments in science and technology, evidenced by a contract or agreement for a scientific project, or as a donation to a scientific or environmental institutions⁴⁷

2 Research in the Design of New Incentives⁴⁸

Important research is also being done on establishing the technical basis for the design of new economic and other incentives to encourage the public to take up the cause of conservation and the sustainable use of biodiversity

One of the areas of research concerns the valuation and design of economic policies for the local management of Colombian ecosystems, a joint project of the Alexander von Humboldt Institute and National Planning Department





This research aims to produce a new concept in approaches to conservation, preservation, maintenance, sustainable use and restoration of re-newable natural resource\, which are an Important source of income for the country as a whole and for the local communities which have gradually been acquiring greater awareness of the importance of protecting biodiversity

The above are just a few examples of the wide range of incentives available in Colombia to encourage environmentally healthy investments and the adoption of clean technologies Between them, the incentives form a vital instrument for the implementation of the Policy and the Convention They are Intended to promote conservation and sustamable use of the components of biodiversity, and to discourage transformation and degradation

TRAINING, EDUCATION AND DISSEMINATION

In accordance with Articles 12 and 13 of the Convention⁴⁹, and its own 1991 Constitution, Colombia has taken a series of measures to strengthen public awareness of the importance of environmental education to present and future generations who face the challenge of making the idea of sustamable development a reality

Environmental education is an essential tool in the generation of a new concept of development whose objective is to be sustamable The 1991 Constitution accepts that environmental education has a function in the formation of the citizen, who most he aware of his role in the building of a democratic society where sustamable development,

the quality of life, environment and education are inseparable concepts⁵⁰

Law 99 of 1993 makes it a function of the Ministry of the Environment to adopt plans, programmes and activities in environmental education jointly with the Ministry of Education

In this context, educational proposals must he made which incorporate the environmental dimension, and the Education Law (Law 115 of 1994) proposes that environmental education will he part of mandatory instruction, and will he formally incorporated into the curriculum

Decree 1743 of 1994 regulated Law 115 of 1994 by introducing the School Environmental Projects (PRAES) in all basic education institutions, in order to help solve specific environmental problems The Decree also calls for the form&on of teachers to direct the PRAES and provide the whole range of environmental education⁵¹

The Ten Year Plan for education, produced in 1996, expressly requires that environmental education becomes part of the basic cycle, and its objectives and goals contain the proposal that "Citizens must he formed to use scientific and technological knowledge to make a contribution of some kind in their field of activity, to the sustamable development of the country and the preservation of the environment"

Likewise, the strategies at the heart of the subject of environmental education include i) Coordination between sectors and between institutions, ii) The inclusion of envi-

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ronmental education in formal and non-formal education, *iii*) The encouragement of research and individual participation to support the Citizens Projects for Environmental Education -PROCEDA-, *iv*) The formation of teachers for environmental education *v*) The design, implementation, support and promotion of plans and actions in communication and dissemination, *vi*) The promotion and strengthening of environmental military service, *vii*) The promotion of ethno-education in environmental education, and *viii*) The encouragement of environmental education projects with a gender perspective⁵²

In the political and legal context described, the Environmental Education, Civic Participation and Population Advisory Office of the Ministry of the Environment started work in 1995 on the document "Cultura para la Paz Hacia una Política de Educación Ambiental, 1995-1998" It also signed agreements with the Ministry of Education, the Apprenticeship Service SENA, and the higher education authority ICES, funded by IDB and the World Bank This was the start of a number of activities which include projects in the area of environmental educational, training of environment sector professionals, training for a specialist environmental police force and strengthening of institutions for urban environmental management

In 1995 the Ministry set up the Environmental Education Network -TARA PA-, as a means of supporting and coordinating environmental education activities the Regional Environmental Authorities, and followed up its strategy of educational communication and dissemination on a national scale

Amongst its activities in this field were the publication, printing and distribution of the magazine *Diversa* and the bulletin *Diversidad*, which disseminate scientific and educational information, major events in the environment sector, and specifically addressed to a readership not familiar with environmental subjects

Following this line of work, a CD ROM multimedia Spanish/English guide to the National Parks was recently produced to promote ecotourism and environmental education, with over 400 photographs, 55 videos and 1,000 information files on the natural and cultural wealth of Colombia The guide offers a detailed view of the different

biogeographical regions and biodiversities The information on the Parks includes trails, Infrastructure, ecosystems, activities, cultures and the local population

Thus, Colombia can be said to have developed formal and non formal educational proposals in recent years, designed to encourage conservation and the sustainable use of biodiversity, and to have incorporated them into the plans, programmes and policies of the education and environment sectors

CITIZEN PARTICIPATION

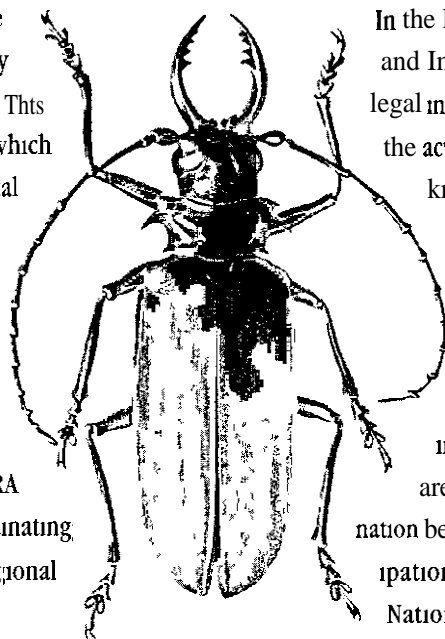
Article 13 of the Convention refers to the need to promote public awareness of the Importance of the conservation of biodiversity Colombia has a series of mechanisms which allow the ordinary citizen to participate in environmental management, so that collective awareness of the Importance of the sustainable development of our biodiversity will be multiplied

In the last ten years Colombia has designed and Implemented a series of policies and legal instruments⁵³ to facilitate and promote the active participation of civil society in all kinds of decisions, and in particular in decisions related to environmental management and the protection of biodiversity

In relation to the legal mechanisms for the participation of civil society in environmental management, there are now new opportunities for coordination between sectors and for citizen participation in national bodies, such as the National Environmental Council, and regional and local bodies such as the boards

of the Regional Environmental Authorities⁵⁴, participation in the Environment Public Hearings on environmental decisions under debate, and the Prior Consultations with the indigenous and black communities, held when a proposal is made to exploit natural resources on or under their community lands

There are other equally Important forms and procedures of participation, such as *i*) The right of any public or private individual or entity to intervene in administrative procedures involving the environment, *ii*) The requirement that decisions on environmental matters must be communicated to any person requesting it in writing, and *iii*) The right of all individuals and legal entities to make a





SOIL

formal petition to the environmental authorities for information concerning any environmental problem. There are also the various actions available under the Constitution⁵⁵, mentioned in Chapter III of this report.

Law 21 of 1991 contains special provisions for indigenous communities, and Law 70 of 1993 sets up a special regime for the black communities. Both reassert the Constitutional and legal principle of prior consultation on projects to be executed in the territories of these communities. Law 70 of 1993 adds that the black communities may participate in environmental impact studies for projects requiring environmental licences, and proposed on their territories.

Another important development is the creation of ECOFONDO, established during 1993-1994. The fund was proposed as a channel for local and foreign contributions to i) the strengthening of Colombian NGOs engaged in environmental management, ii) The fostering of knowledge, management and conservation of the environment and renewable natural resources, and iii) The promotion of sustainable development through the funding of projects executed by these organizations. Independently, or in coordination with government agencies, ECOFONDO is legally defined as a "Non profit common utility institution with its own assets and administrative autonomy".

The Fund was the result of a major process of consultation in different regions of Colombia, in which government agencies and NGOs, DNP and INDERENA, amongst others, took part.

To date, more than 300 NGOs are part of ECOFONDO. Thus, the administrative, political and financial responsibility basically falls on these NGOs.

ECOFONDO has from the start influenced and participated in the instances of action provided by the Constitution and the law for civil society, such as the Regional Planning Councils and the Boards of the Regional Development Corporations.

In the last two years, some US\$3 million has been disbursed to 65 projects being executed by 65 different NGOs. The projects fall under areas which the Fund may finance, and include i) The relationship between culture and the conservation and use of natural resources, ii) The management and conservation of ecologically important areas, iii) Environmental education, and iv) The transfer of environmental technology.

ECOFONDO will have received some US\$53 million to

manage between 1993 and 2002. Some US\$12 million of this come from Canadian debt for nature swaps and US\$41 million from US swaps of the same kind. ECOFONDO's proposals have also been supported financially and logistically by Colombian NGOs and international organisations such as WWF US, WNF, USAID, UNDP and IUCN⁵⁶.

Finally it should be mentioned that since 1995 ECOFONDO has had relations with the European Community, the Amazon Environment Fund, FES, the electricity sector finance company FEN and the BIOPACIFICO project, amongst others, to execute and fund projects jointly.

DEVELOPMENT AND TECHNOLOGY TRANSFER

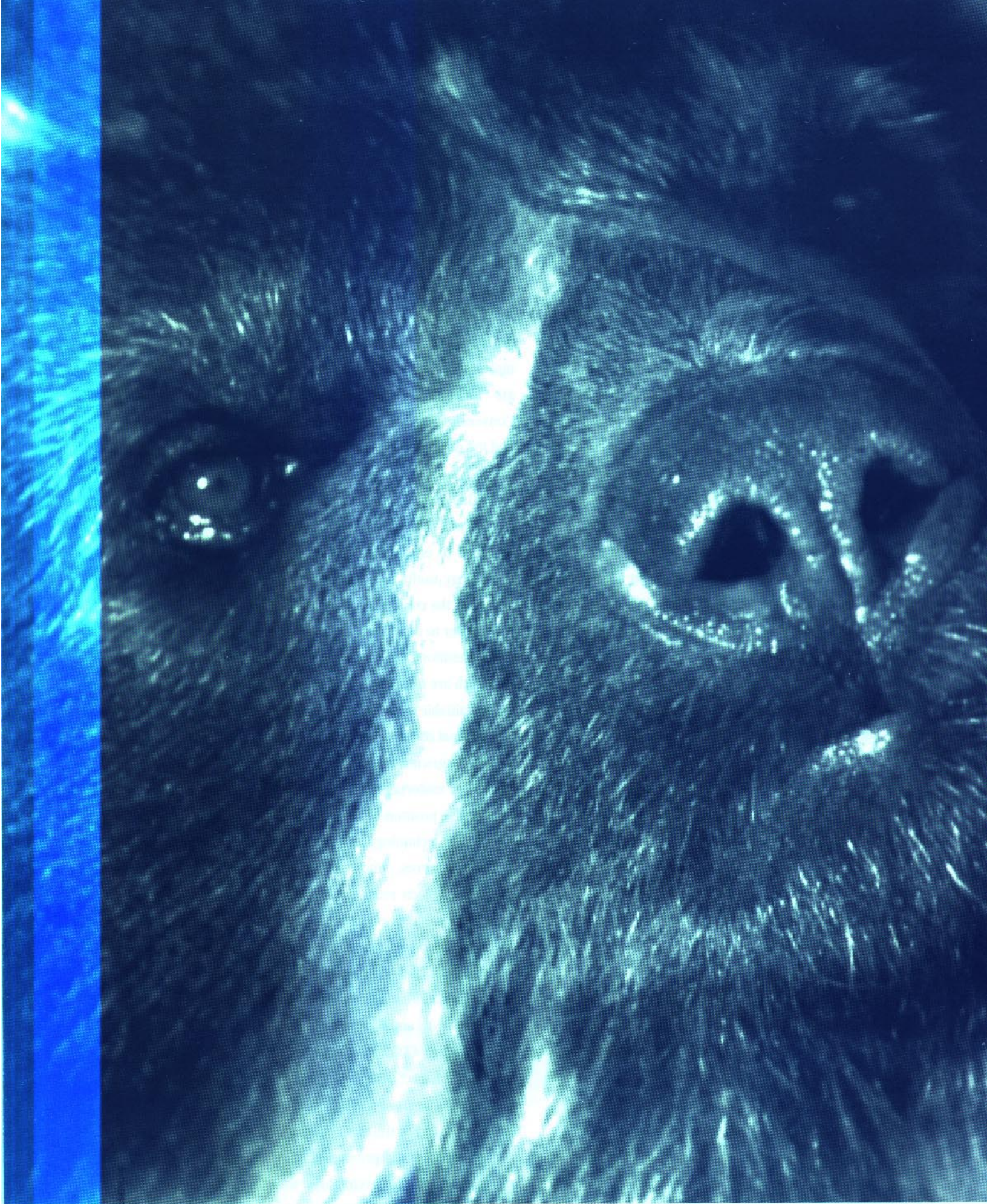
Articles 16, 18 and 19 of the Convention on Biodiversity make provisions for the access to and transfer of appropriate technologies to achieve the objectives of the Convention, and for scientific and technical cooperation and the distribution of its benefits between the contracting parties.

In this area, Colombia has a wide ranging legal framework for such activities to take place. Legislation is designed to encourage the development and transfer of technology useful and applicable to sustainable development and the conservation of biodiversity at all levels.

In order to illustrate the progress made in this area, we would mention some programmes for the agricultural sector which are now being implemented and which promote the sustainable use of biodiversity within the framework of the National Biodiversity Policy.

- The agricultural research institute CORPOICA was created to undertake research which would improve the competitive position of farm production, equity in the distribution of technology and sustainability in the use of the natural resources, amongst other functions. CORPOICA works on projects related to problems of erosion and the management of ecosystems amongst other areas. Its research and technology transfer programs are intended to produce mechanisms which will strengthen sustainable farm production and introduce harmony in the relationship between production systems and the protection of the environment. The projects which CORPOICA finances and cofinances are of direct and indirect benefit to agriculture, the scientific and technological areas of industry, and the environment. CORPOICA is funded by the national budget, the proceeds of sale of its research results, private sector income in the cofinancing of research and technology transfer projects, other Colombian sources and international cooperation⁵⁷.

5



. The National Agricultural Technology Transfer Programme –PRONATTA–⁵⁸ is mainly intended to contribute to the modernization and diversification of agriculture, fisheries and fish breeding and forestry, making them more competitive and improving the quality of life of the small farmer

The State agricultural development agency ICA, through PRONATTA, acts to obtain the participation of Colombian entities in the cofinancing of research, technical assistance, technology transfer and training, amongst other functions

The Program also supports the National IT Network System and provides training in relation to the design, follow up and evaluation of projects. One of the criteria of eligibility of a project is economic and environmental sustainability⁵⁹

The Programme benefits the agricultural and environmental sectors. Funds are allocated to projects proposed freely by public, private and mixed organizations at regional and national levels

The conditions of access to PRONATTA cofinancing funds for research are as follows

PRONATTA	RESEARCH ENTITY
50%	Scientific Research 50%
85%	Technical assistance, technology transfer and training 15%
70%	National Network System, follow-up and evaluation of projects 30%

With regard to Development and Technology Transfer, Colombia again has a solid legal framework, based mainly in the 1991 Constitution⁶⁰ and Law 29 of 1990 and its regulatory Decrees⁶¹

Law 29 of 1990 is also known as the Science and Technology Law, and it contains rules for the encouragement of scientific research and technological development. Amongst other things, it facilitates activities related to technology transfer⁶², support for scientific research in several areas, which include the environment and renewable natural resources, the making of special cooperation agreements between State agencies and private individuals for scientific and technological activities, research projects and the creation of technologies

Finally, it should be noted that COLCIENCIAS, which promotes and funds research projects in different areas, including environment and habitat, has since 1991 been involved in projects in different areas of the environment sector, including technology transfer for clean production. We should mention that the project that started in 1997 for the creation of a National Centre for Cleaner Production and Environmental Technology, was conceived as a centre for the development of technology, working for the National Association of Industrialists –ANDI. COLCIENCIAS has so far contributed non-reimbursable seed capital totalling the equivalent of US\$150,000. The Centre is expected to make it possible to transfer clean technologies in order to encourage conversion to environmentally healthy and economically viable technologies, especially in industry.

In sum, we find that Colombia has applied a legal framework as described here, and has, through a series of different government agencies, taken specific action to facilitate the development and transfer of technologies in some sectors directly and indirectly related to the sustainable management of biodiversity, such as agriculture, industry and the environment.

INFORMATION SYSTEMS

Articles 17 and 18 of the Convention stress the importance of providing suitable mechanisms to promote the exchange of information on conservation and sustainable use of biodiversity and for scientific and technical cooperation for this purpose. In this area, Colombia has made significant progress in the establishment of biodiversity information systems.

Progress has been made on the design and implementation of the Environmental Information System, created in 1994 and coordinated by IDEAM, which manages the operational structures of data and information in such a way as to ensure that the models produced for the interpretation of natural phenomena and of their interaction with economic and social development are functioning as intended. The Environmental Information System has a specific application for information on biodiversity, coordinated with the Alexander von Humboldt Institute. The Institute has started to evaluate the databases for biodiversity used in Colombia and other parts of the world, in order to provide support for institutions which are in the process of computerizing information concerning their biological collections.



In July 1994 the Ministry issued Decree 1600 to regulate the National Environmental Information and Research Systems Shortly afterwards (July 2) it issued Decree 1603, which created the Alexander von Humboldt Institute, responsible for handling information on biodiversity and genetic resources under the direction of the Ministry It is also responsible for programmes of inventory, collection, processing, analysis and dissemination of data and information required to evaluate and follow up the situation of components of biodiversity

The Institute must also coordinate and incorporate the information into the Environmental Information system, including data, statistics, information, systems, models and documentary and bibliographic information on the environment and renewable natural resources The operation and central coordination of this work is the responsibility of environmental research institutes, each working in its specialist areas

For this, and for the dissemination of relevant information on the strategic programmes of the Alexander von Humboldt Institute such as Conservation Biology, the Use and Valuation of Biodiversity, Policy and Legislation, Inventories and Communications, and to prepare the National Inventory of Biodiversity, the Institute is working on an encyclopaedic-type information system which allows for interactive handling of large amounts of information The system is called ARKAS and is a tool for the handling of biological collections which allows information on biodiversity and related parameters to be entered, added, consulted and handled

The ARKAS system, now in an advanced state of development, is designed to facilitate consultation and exchange of information between the various collections in Colombia and networking among researchers in Colombia and abroad The Humboldt Institute is supporting the computerization of some of the most important biological collections in Colombia, providing the ARKAS database, computers and funding the process of computerization itself

In a few years, we expect to have computerised information for most of the important collections in Colombia, and to be able to "repatriate" information on Colombian materials held in biological collections of other countries, and to have a network operation connecting the collections and the researchers In this, the Humboldt Institute has the financial support of the Ministry, under an agreement

Finally we should mention as a regional experience the

biodiversity information-handling systems This was a regional workshop for Latin America and the Caribbean on the Clearing House Mechanism -CHM- of the Convention on Biodiversity held on October 13-15 in Cartagena, Colombia

The event was attended by representatives of Latin America and the Caribbean, GEF, observers from German cooperation GTZ and the Central American Commission for Environment and Development CCAD, amongst others

One of the topics which attracted most intensive discussion was related to the type of information that should be stored in the CHM The following areas were suggested national legislation on biodiversity, information on biodiversity inventories, traditional knowledge of biodiversity, information on available techniques and technologies, direct and indirect threats, a directory of institutions and experts on biodiversity, systems of economic valuation and incentives, the markets and trade associated with biodiversity, and environmental impact studies Also, in the exchange of experiences and opinions during the event, it could be appreciated that the process followed at national level to create and consolidate the biodiversity information system is consistent with the practices and trends of other countries

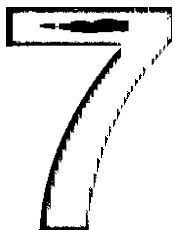
The regional workshop was a step forward in the consolidation of the CHM and its relation with regional initiatives such as the Interamerican Biodiversity Information Network -IABIN

The creation of the environmental Research and Information System, with a specific application for biodiversity, coordinated by the Alexander von Humboldt Institute, is a major step forward in the organization of available information, and will lend greater efficiency to biodiversity research activities in Colombia

FUNDING

Article 20 of the Convention refers to the funding which each signatory state should provide, in accordance with its means, to support activities designed to achieve its objectives Here, we should stress the importance given to the environment by Colombia's environmental policy in the last five years

In Colombia, the environment sector receives funds from the national budget, own resources from the decentralized agencies and from international cooperation In the last four years (1994-1998) Colombia has earmarked



some US\$700 million from the budget to finance the National Environmental Policy, whose objectives include the protection and maintenance of biological and cultural diversity.

The Environmental Policy Unit of the National Planning Department has recently produced its Financial Manual for SIN.1 Entities, which offers guidelines for the coordination of different sources of funding to secure the financial sustainability of SIN.

In 1993-1997 the Ministry's Environmental Investment Sub-Programme, which handles the proceeds of loans from IDB, approved the funding of some 70 projects related to education, training and research in the field of environment and renewable natural resources, for a total of some US\$60 million.

Since 1992 there have been more than 60 projects for environmental improvement, within the National Environmental Policy. The projects have been executed by the agencies which form part of SIN, funded by international cooperation and the national budget.

Since most sources of funds require that projects be well named, the figures which appear below are those officially agreed at the time the projects were approved, and include external contributions as well as counterpart resources provided by Colombian entities. The counterpart resources may be in cash or in kind. Resources in kind are difficult to quantify, but are an important contribution to the execution of projects. The main areas of financial investment are:

a. For the protection of strategic ecosystems and biodiversity, there have been investments totalling US\$700 million since 1992, to fund 12 or more projects for execution in the period 1993-2000, of which about US\$300 million of the total of US\$400 million represent international cooperation.

b. For the government policy for better water and clean seas and coasts, more than five projects have been designed for the period 1993-2000, and approved funds total some US\$14 million, of which about US\$5 million will correspond to international cooperation.

c. For woodlands, investments totalling some US\$50 million have been made in 11 or more projects for execution in 1993-2005, the counterpart funds being of the order of US\$10 million.

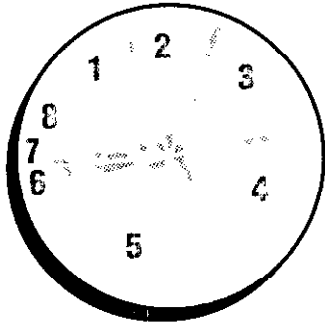
d. The investment in Aquaculture Production is projected as US\$10 million in 1993-2001, for some 10 projects. International cooperation has approved about US\$10 million.



e In 1996-1998 about US\$6 million will be invested in Environmental Awareness and Education International cooperation will have supplied about US\$4 million of this

f About US\$1 million will be invested in Environmental Information and research Systems during 1994-1998

g About US\$1 million will have been invested in Environmental Regulation and Planning in 1995-1998



- 1 Clean production
US\$ 13 million 1993-2001

- 2 Better water and clean seas and coasts
US\$ 14 million 1993-2000

- 3 Woodlands
US\$ 38 million 1993-2005

- 4 Protection of strategic ecosystems and biodiversity
US\$ 47 million 1992-2000

- 5 Strengthen SINA entities
US\$ 83 million 1993-2003

- 6 Environmental regulation and planning
US\$ 1 million 1995-1998

- 7 Environmental information and research systems
US\$ 1 million 1994-1998

- 8 Environmental awareness and education
US\$ 4 million 1996-1998

h US\$83 million will have been invested in more than 12 projects during 1993-2003, to strengthen SINA

Colombia's Ministry of the Environment is currently negotiating with institutions and governments of other countries to obtain funding for new projects in the above areas for 1998 and later

In this way the funding of projects in areas covered by the Policy is remedying shortcomings noted in the Policy and identified as being the indirect causes of loss of biodiversity described in Chapter II of this report

The scientific research institutes, especially (since 1995) the Alexander von Humboldt Institute, have invested some US\$3 million equivalent from the national budget in research in the Institute's strategic programs such as Conservation Biology, the Use and Valuation of Biodiversity, Policy and Legislation, Inventories, and Communications and Information

Finally, there are a number of Funds used by the Regional Environmental Authorities to finance projects

for the protection and sustainable use of renewable natural resources, and which can therefore indirectly assist the conservation of biodiversity. The most important of these Funds are

- FONAM, which funds and cofinances public and private organizations engaged in projects for the management and conservation of renewable natural resources

- PRIDECU, the river basin protection programme which provides financial and technical assistance for projects of local communities in conservation, reforestation and other activities affecting water, flora and fauna

- FAMAZONICO, the Amazon environmental fund which distributes funds to environmental projects in the Colombian Amazon

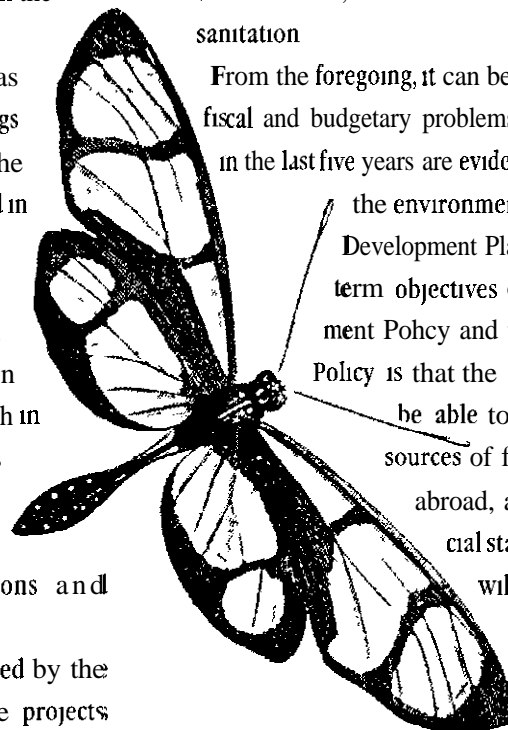
- ECOFONDO, which channels funds to conservation and environmental management projects implemented by NGOs, working independently or in coordination with State entities

- The ROYALTIES FUND. The Constitution requires that a percentage of this Fund be earmarked for protection of the environment. Law 41 of 1994 allocates 21.75% of the revenues of the regional authorities for environment related investment

*Transfers of the electricity sector to the Regional Environmental Authorities and City and Municipal administrations in the areas of river basins, dams and steam generating plants. A portion of these transfers is allotted to programmes for the protection and conservation of basins, environmental improvement and basic sanitation

From the foregoing, it can be appreciated that despite fiscal and budgetary problems, the investments made in the last five years are evidence of the importance

of the environment sector in the National Development Plan. The medium and long term objectives of the National Environment Policy and the National Biodiversity Policy is that the environment sector will be able to coordinate the various sources of funding in Colombia and abroad, and so ensure the financial stability of SINA so that it will be able to achieve the objectives of biodiversity policy, amongst other things.



- 24 These Articles contain the following obligations amongst others binding on signatory States regulation of the use of important biological resources for the conservation of diversity the maintenance and protection of knowledge innovations and practices of indigenous and local communities the adoption of measures to promote the sustainable use of the components of biodiversity and to reduce adverse effects on biodiversity as far as possible
- 25 Gorgona Nature Park in the Pacific with an area of 12 487 hectares including its marine territory (Resolution 1265 of 1995) and the Rosario Coral Nature Park off the Caribbean coast plus San Bernardo Island with an area of 100,500 hectares in territorial waters (Resolution 1425 of 1996)
- 26 Guanenta Department of Santander with an area of 10,429 hectares of oak woodland (Resolution 190 of 1993) Malpelo Island with an area of 38,971 hectares including the island and surrounding ocean (Resolution 1292 of 1995) and Otun Quimbaya in the central range of the Andes with an area of 2429 hectares This region contains examples of *Xeroxylum Qundiensis* or wax palm Colombia's national tree (Resolution 916 of 1996)
- 27 Mangroves of San Andres Providencia and Santa Catalina in the Caribbean (Resolution 136 of 1994) and Old Providence on the Island of Providencia (Resolution 1021 of 1995) with 955 hectares of coral and mangroves
- 28 See Map 3 for the distribution of the system
- 29 The areas are 1) National Parks 2) Nature Reserves 3) Unique Natural Area 4) Flora Sanctuary 5) Fauna Sanctuary and 6) Highway Park
- 30 These regulations develop Article 14 of the Convention which refers amongst other things to the evaluation of environmental impact or adverse effects which a given project may have on components of biodiversity
- 31 IDEAM The Institute of Hydrological Meteorological and Environmental Studies Decree 1276 of 1994
- 32 INVEMAR The José Benito Vives de Andraes Marine Research Institute Decree 1277 of 1994
- 33 The Alexander von Humboldt Biological Resources Research Institute Decree 1603 of 1994
- 34 SINCHI The Amazon Scientific Research Institute Decree 1603 of 1994
- 35 The John von Neumann Pacific Environmental Research Institute Decree of 1994
- 36 The Article says that each contracting party will to the best of its ability adopt appropriate economic and social measures to provide incentives for the conservation and sustainable use of biodiversity
- 37 Incentivos Tributarios a la Inversion Ambiental Office of Economic Analysis Ministry of the environment 1997 p.5
- 38 Ibid
- 39 Incentivos Tributarios a la Inversion Ambiental Office of Economic Analysis Ministry of the environment 1997 p.22
- 40 Article 171 Law 223 of 1995 and Art 37 of the Tax Statute in harmony with Arts 107 108 and 111 of Law 99 of 1993 (as cited in Incentivos Tributarios a la Inversion Ambiental op cit)
- 41 DNP Manual Financiero de las Entidades del SINA v 1 Bogota November 1997 Ch 4
- 42 Ibid
- 43 Ibid
- 44 Ibid
- 45 Ibid
- 46 Incentivos Tributarios a la Inversion Ambiental Office of Economic Analysis Ministry of the environment 1997
- 47 The applicable provisions of law are (a) Article 6 of Law 29 of 1990 concerning exemptions and allowances for scientific and technological activities and (b) Article 125 of the Tax Statute (Law 223 of 1995) Cited in Incentivos Tributarios a la Inversión Ambiental p 51
- 48 Hernandez Sara (1997) Report on systems of economic valuation of biodiversity in Colombia prepared for the National Report on Biodiversity Some relevant aspects are being worked on in the project for valuation and design of economic policy for the management of Colombian ecosystems currently being executed jointly by the Alexander von Humboldt Institute and DNP
- 49 These Articles require signatory countries to take the measures necessary to promote and strengthen research training education and public awareness of the importance of conservation and the sustainable use of biodiversity
- 50 Ministry of Education "Incorporación de la Dimension Ambiental en la Educacion Basica en zonas rural y pequeno urbanas del pais produced under the agreement between the Ministry of the Environment IDB and the Ministry of Education Bogota 1994
- 51 Ibid p 8
- 52 Ministry of Education working document La Educación Ambiental en el Ministerio de Educación Nacional Historia y Proyecciones Bogotá March 1996
- 53 The 1991 Constitution and Law 99 of 1993
- 54 The Boards allow the participation of mayors in the Corporation's jurisdiction indigenous or ethnic groups traditionally settled there and of NGOs domiciled there and engaged principally in the protection of the environment and renewable natural resources (Article 26 of Law 99 of 1993)
- 55 i) Action for Enforcement requiring the State to implement its decision iii) the Action for the Protection of Fundamental Rights for individual rights, and ii) Popular Actions for collective rights
- 56 DNP Manual Financiero de las Entidades del SINA DNP v 1 Bogota November 1997 Ch 3
- 57 DNP op cit Ch 5 Mechanisms of Sector Financing
- 58 The Program was created by Resolution 476 of 1994 and changed by Resolution 812 of 1994
- 59 Ibid
- 60 Articles 67 and 70 encourage scientific and technological improvement the protection of the environment the promotion and fostering of access to culture by all Colombians through scientific and technical instruction amongst other things It also encourages the promotion of research science development and dissemination of the country's cultural values the creation of incentives for individuals and institutions which develop science and technology and other cultural expressions
- 61 Decree 585 of 1991 in which the National Science and Technology Council was created COLCIENCIAS was reorganised Decree 393 of 1991 which regulated associations formed for scientific and technological activities research projects and the creation of technologies and /Decree 591 of 1991 which regulates specific modes of contract for the encouragement of research and technology activities
- 62 Article 5 states that in all public administrative contracts with foreign individuals or organisations there will be provisions for the transfer of technology Article 6 mentions some exemptions and tax allowances and other tax advantages to encourage scientific and technological activities
- 63 Ministry of the Environment International Technical Co-operation Office December 1997

The goal of conservation and sustainable “use of biodiversity is a very long term one. It requires a process of continuous improvement of productive services and processes in order to reduce the adverse effects on the environment and renewable natural resources. For this reason the National Biodiversity Policy recognizes that “biodiversity is dynamic in time and space, and its components and evolutionary processes must be conserved”

structure for the public administration of the environment sector, with a wide legal framework, is engaged in two processes of vital importance for the implementation of the Convention, through the Ministry of the Environment and the Alexander von Humboldt Institute (1) The National Strategy for Biodiversity and its Plan of Action, and (2) The National Report on the Situation of Biodiversity in Colombia

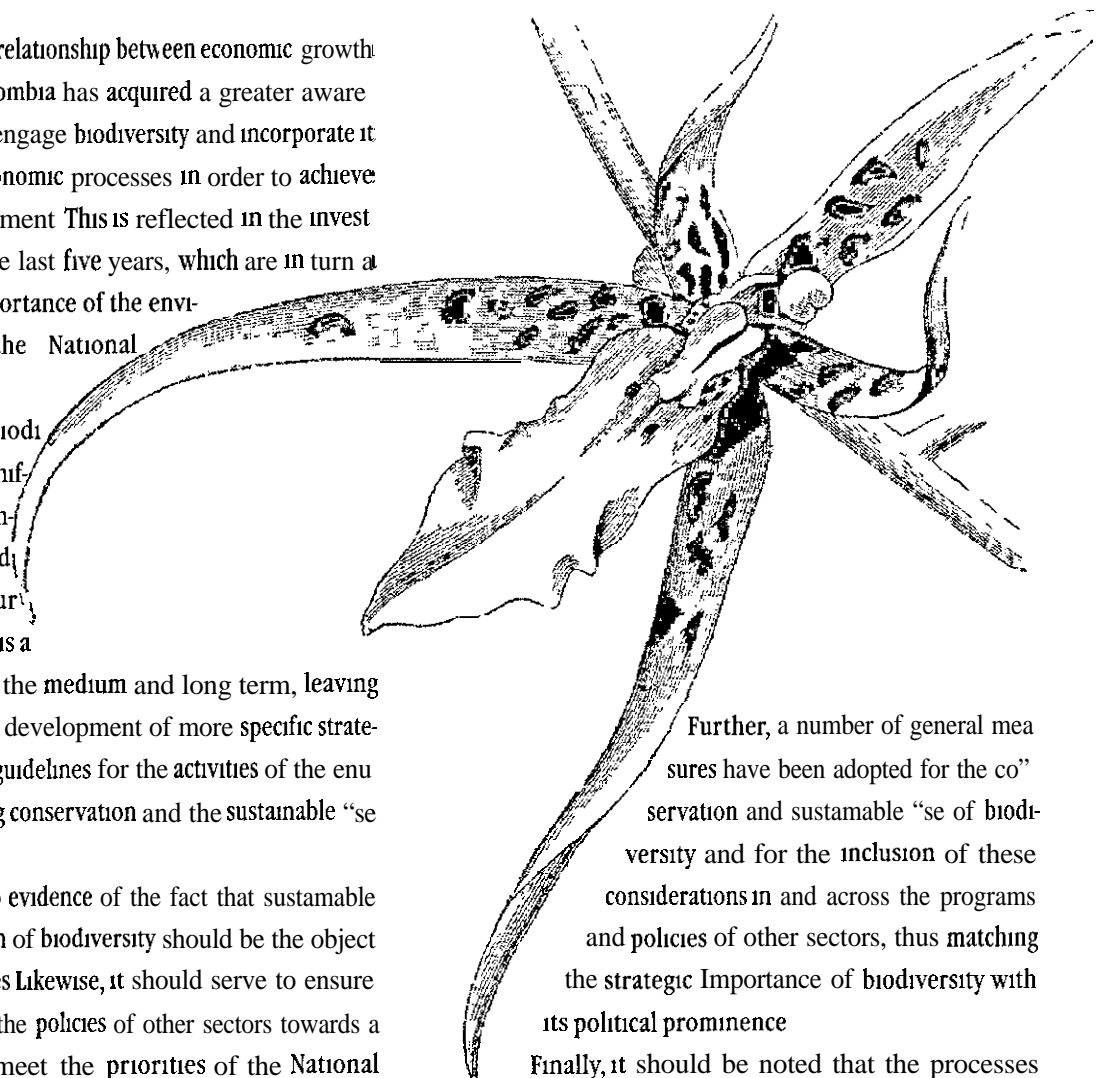
Conclusions

Due to the close relationship between economic growth and biodiversity, Colombia has acquired a greater awareness of the need to engage biodiversity and incorporate it into its social and economic processes in order to achieve sustainable development. This is reflected in the investments made over the last five years, which are in turn a reflection of the importance of the environment within the National Development Plan.

The National Biodiversity Policy is a significant advance in planning for the “use and conservation of our biodiversity. There is a frame of action for the medium and long term, leaving room for the future development of more specific strategies. There are also guidelines for the activities of the entities of SINA regarding conservation and the sustainable “use of biodiversity.

The Policy is also evidence of the fact that sustainable use and conservation of biodiversity should be the object of long term policies. Likewise, it should serve to ensure coherence amongst the policies of other sectors towards a common end to meet the priorities of the National Biodiversity Policy and the Convention on Biological Diversity.

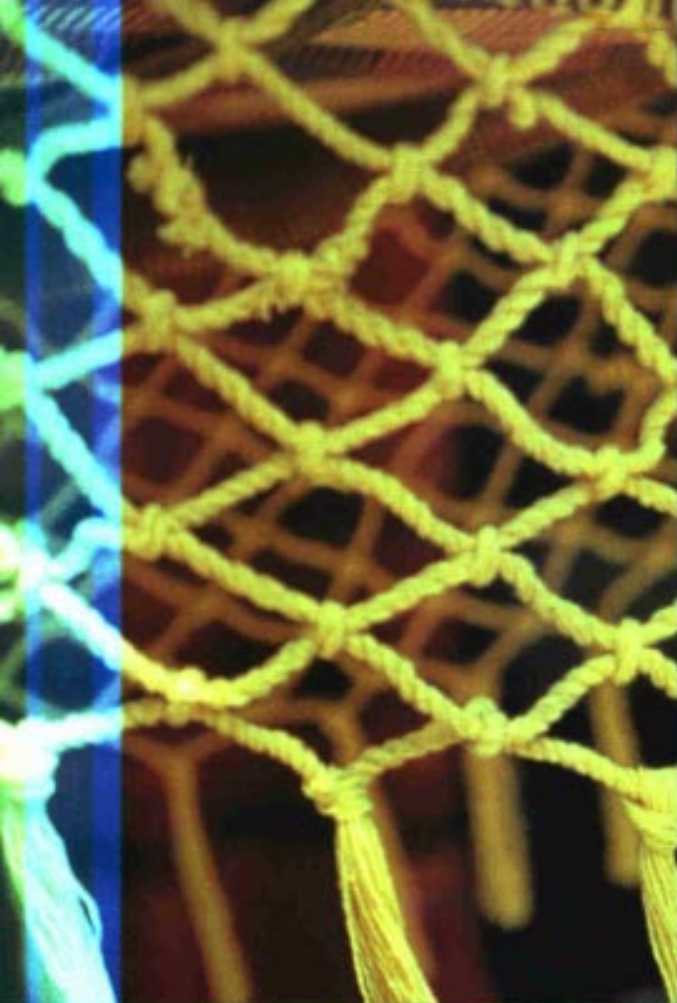
Thus we can see that, in accordance with the mandate of Article 6 of the Convention, Colombia’s new institutional



Further, a number of general measures have been adopted for the conservation and sustainable “use of biodiversity and for the inclusion of these considerations in and across the programs and policies of other sectors, thus matching the strategic importance of biodiversity with its political prominence.

Finally, it should be noted that the processes described above are providing important material for decision-making in which sustainable development and the conservation of biodiversity is balanced with the interests of economic development.

DESIGN BY JAVIER GONZALEZ MAESTRE. PHOTOGRAPHS BY MAURICIO BALESTRO



PROGRESS IN THE IMPLEMENTATION OF THE CONVENTION ON BIOLOGICAL DIVERSITY

