

**COUNTRY PROFILE
ON
ENVIRONMENT**

COLUMBIA

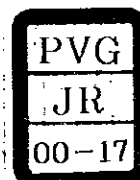
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JAPAN INTERNATIONAL COOPERATION AGENCY



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USERS GUIDE: Contents of the Report

This report consisted of the following Chapters on environmental information of the country.

1. Keywords of the Environment

Various features and principal environmental issues and their related matters of the country are schematized within 1 page to easily understand the country's natural and social environmental issues on the whole.

2. Fact Sheet

Principal indices and natural and social environmental characteristics of the country such as economy, demographic statistics, socio-economic conditions, various important resources available in the country are described.

3. Institutional Context

3.1 Environmental Agency

Matrix table on governmental agencies related to the environmental issues in the Chapter 4 is described to grasp the role of the agencies easily. Responsibilities and organizational structure of the principal responsible agency for the environment, and responsibilities of related agencies are explained. Main activities of the various environmental non-governmental organizations are described in the table.

3.2 National Environmental Policy

Environmental policy of the country such as national environmental action plan is explained.

3.3 Environmental Laws and Regulations

Environmental laws and regulations of the country including their status of applications are described.

4. State of the Environment

In this Chapter, status of the various environmental issues as follows are covered with information on related agencies, related standards, laws and regulations, examples of the issue are explained. In the section 4.3, other kind of considerable environmental issues in the country are described based on the report which local consultant prepared.

4.1 Air Pollution	4.7 Waste Water Management
4.2 Water Pollution	4.8 Forest Conservation/Desertification
4.3 Other Pollution	4.9 Biodiversity
4.4 Waste Management	4.10 Natural Resource Management
4.5 Energy Conservation and Alternative Energy	4.11 Natural Disaster
4.6 Water Supply	4.12 Environmental Education

5. International Relationship

Status of the implementation of the economic and technical assistance projects in the country are outlined. International conventions and agreements on environment which the country agreed and ratified are listed up in section 5.1, and environmental projects which are funded and/or implemented in the country by donor countries and international organization in the section 5.2. In addition, location map of the project funded and implemented by using the Official Development Assistance (ODA) of Japanese government are showed.

6. Sources of Information

Governmental environmental agencies related institutions and NGOs are listed with the some information such as contact address and e-mail address.

7. References

References used in the report are listed.



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1. KEYWORDS OF THE ENVIRONMENT

1.1 Features of the Country

	Related pages
<p>① Gross Domestic Production(GDP) US\$1,516 per capita (Japan : US\$33,857, China : US\$361) Total : US\$54 billion</p>	<p>· 2. Fact Sheet p.3</p>
<p>② High-concentrated Urban Population Urban population rate: 73% Total population: 35 million, Urban population: 26 million</p>	<p>· 2. Fact Sheet p.3 · 4.1, 4.2, 4.4</p>

1.2 Keyword of Environmental Issues

	Related page
<p>① Water pollution in the Magdalena river basin</p>	<p>4.2 Water pollution p. 12</p>
<p>② Inadequate disposition of solid waste</p>	<p>4.4 Waste management p. 13</p>
<p>③ Deforestation</p> <p>· Illicit cultivation and fumigation</p>	<p>4.8 Forest Conservation p. 17</p>
<p>④ Oil pollution</p> <p>· Attacks to oil pipelines by the guerillas</p>	<p>4.9 Biodiversity p. 19</p>
<p>⑤ Loss of biodiversity</p>	<p>4.9 Biodiversity p. 19</p>

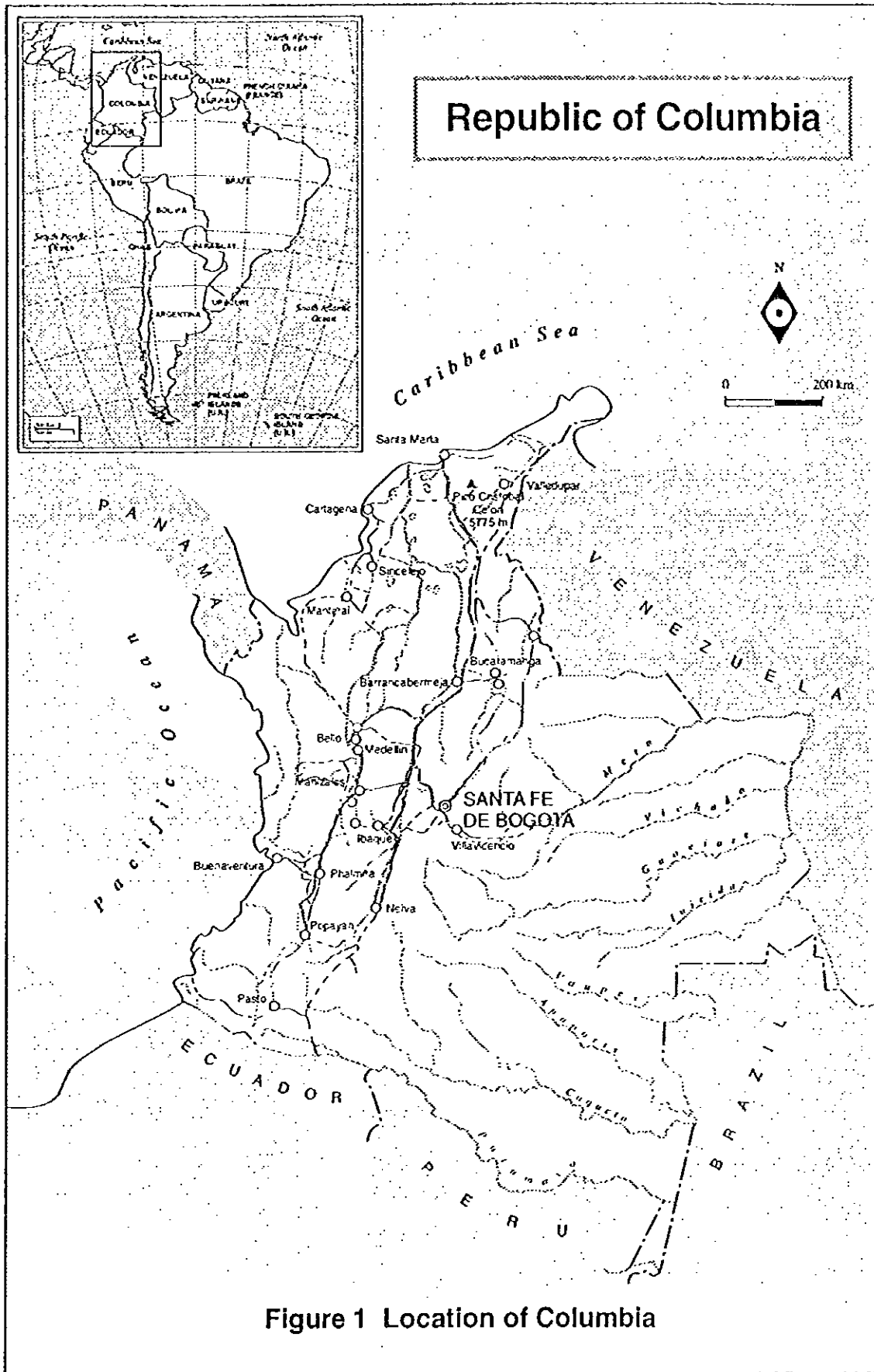


Figure 1 Location of Columbia

Source: Data Atlas 1994 - 1997

2. FACT SHEET

2.1 Socio-economic Index

Index	Data	Data year	Reference
Population	35.10 million (annual average incremental rate : 1.7% (1990~95))	1995	b)
Race	Half Caucasian (mainly Spanish)-half aborigines 58%、Caucasian 20%、half Caucasian-half black 14%、black person 4 %	(no information)	d)
Religion	Catholicism 95%	(no information)	d)
Literacy rate	Adult female : 89% Adult male : 90%	1990	b)
Urban Population rate	73% (25.53 million)	1995	b)
Life expectancy	69 (1990~1995 average)	1990-95	b)
Under-5 mortality rate	19 (per 1,000)	1993	b)
GNP ^{*1}	\$19,955 million (\$1,400/person)	1993	b)
GDP ^{*1}	\$54,076 million (\$1,516/person)	1993	b)
GDP structure	Agriculture : 16% Industry : 35% Service industry & others : 50%	1993	b)
Prime industry	Textiles, sugar, leather, steel, cement, chemical	1996	d)
Prime resource	Oil, emerald, gold, silver, copper, raw rubber, platinum, coal, coffee, rice, corn, salt	1996	d)
Safe water (% of population with access) ^{*2}	Urban : 88% Rural : 48%	1980-1995	b)
% of sewerage population ^{*3}	Urban : 73% Rural : 37%	1980-1995	b)
Human Development Index (HDI)	0.848 (World rank 51, GDP per capita rank 58 in same year)	1994	c)

*1 : The estimated value of the GNP was exchanged and adjusted from local currency into US\$ by means of 3-year average of exchange rates. The estimated value of the GDP was presented in US\$ of 1993 based on the exchange rate.

*2 : "Safe water" includes treated surface water, and untreated water which is pumped up from protected spring / excavated well and sanitary well.

*3 : "Sewerage population" should be met conditions that the population in urban area can use public sewerage and indoor facility such as dug hole outdoor toilet, pouring water toilet, private sewerage system, public community toilet, and similar facilities, and that the population in rural area can use dug hole outdoor toilet, pouring water toilet, or other proper treatment methods.

2.2 Geographical Characteristics

(no information)

Source: a)

2.3 Meteorological Characteristics

<p>Climatic classification</p> <ul style="list-style-type: none"> • Superhumid Climate: Center and South of the Pacific Region (Department of Chocó and south of Department of Nariño), mountain foot zones of the Oriental Cordillera (in the Departments of Meta and Putumayo). • Humid, Semihumid and Subhumid Climate: Amazon River Basin, Orinoco River Basin, Mountain foot Zones of the three (occidental, central and oriental) cordilleras of the Andes Mountains, partly in Lower Cauca River Basin and Middle Zone of Magdalena River Basin. • Dry and Semidry Climate: major part of the coastal Caribbean Region, River Basins of Sogamoso and Chicamocha, highland of Cundinamarca and Boyacá, Bogotá River Basin, part of middle and high valley of Magdalena, part of the department of Valle del Cauca y areas of middle River Cauca in the department of Antioquia. • Arid Climate: Middle and high Guajira, isolated deserts of la Tatacoa in the department of Huila and in the vicinity of Cúcuta.

Source: a)

2.4 Ecological Characteristics

<p>Biogeographical feature:</p> <ul style="list-style-type: none"> • 5 different ecological regions: the Andes Mountains, the Amazon Jungle, the Tropical Plain of Orinoco, the Caribbean Coastal Region and the Pacific Coastal Region. • The 5 main regions are divided further into various sub-regions <p>Protected area:</p> <ul style="list-style-type: none"> • 34 Natural Parks, 9 Sanctuaries of Fauna and Flora, 2 Natural Reserves, and 1 Unique Natural Area

Source: a)

2.5 Hydrological Characteristics

Hydrological Region	Area (Km ²)	Principal Rivers (length: km)
Atlántico	361,692	Magdalena (1,540), Cauca (branch of Magdalena) (1,350), Atrato (750), Sinú (238), Ranchería (139), Fundación (109),
Catatumbo	16,565	Secuavo (160), Zulia (119)
Amazónica	338,235	Vaupéz (571), Caquetá (1,200), Putumayo (1,166), Amazonas (112), Guanía (486)
Orinoquía	350,102	Arauca (292), Meta (1,000), Guaviare (1,326), Vichada (530), Inírida (700), Tomo (425)
Pacífico	75,154	San Juan (245), Patía (350), Mira (180)
Total	1,141,748	

Source: El Medio Ambiente en Colombia, IDEAM, 1998 (a)

2.6 Land Use

Coverage	Aspects	Area (%)
Jungle and Forest	Rain Forests in the Pacific and Amazon Region, Relicts of forests in the Andean, Caribbean and Orinoco Regions.	45
Agro-ecosystems	Andean agro-ecosystems (14%), Agro-ecosystems of Basal Climatological Story (9%). Other areas of agro-ecosystems are distributed in the rest of territory.	34
Savannas	Natural Savannas	14
Marsh	Wetland in the Caribbean, Andean, Amazon and Orinoco Regions.	2.2
Xerophyte	Coverage in enclave form of distribution in the inter-Andean valleys and in the Andean Region, in the extensive form in the littoral Caribbean Region.	1.6
Páramos (Highland Heath)	The páramo of Sumapaz is the biggest territorial extension	1.4
Rock-dwelling	Enclaves in the Serranía de Chiribiquete and similar adjacent formations.	0.8
Mangrove swamp	Vegetal Communities in the area of transition of land and sea in the Caribbean and Pacific Coastal Regions.	0.3
Water Area		0.3
Others	Inhabitant area, land without vegetation.	0.15

Source: IDEAM, 1998.

3. INSTITUTIONAL CONTEXT

3.1 Environmental Agency

3.1.1 Governmental Agency

(see "6. SOURCES OF INFORMATION" on each agencies and its contact address.)

Governmental Agency	Environmental Issues (Each No. consist with Section No.)											
	4.1 Air pollution	4.2 Water pollution	4.3 Other pollution	4.4 Waste	4.5 Energy	4.6 Water Supply	4.7 Waste Water	4.8 Forest	4.9 Biodiversity	4.10 Resources	4.11 Disaster	4.12 Education
Ministerio del Medio Ambiente	○	—	○	○	○	○	—	○	—	○	○	na
Ministerio de Minas y Energía	○	—	—	—	○	—	—	—	—	—	—	na
Corporaciones Autónomas Regionales	○	—	—	○	—	○	○	○	○	○	○	na
Departamento Administrativo del Medio Ambiente	○	—	—	—	—	—	—	—	—	—	—	na
Ministerio de Salud	—	○	○	○	—	—	○	—	—	—	—	na
IDEAM	—	○	—	○	—	○	—	—	—	—	—	na
Corporaciones Regionales	—	○	—	—	○	—	—	—	—	—	—	na
DAMA	—	○	—	—	—	—	—	—	—	—	—	na
ECOPETROL	—	—	—	—	○	—	—	—	—	—	—	na
Eccarbon	—	—	—	—	○	—	—	—	—	—	—	na
ISA	—	—	—	—	○	—	—	—	—	—	—	na
Empresas de Acueductos	—	—	—	—	—	○	—	—	—	—	—	na
Sistema de Parques Nacionales, Ministerio del Medio Ambiente	—	—	—	—	—	—	—	—	○	—	—	na
Instituto Alexander von Humboldt	—	—	—	—	—	—	—	—	○	—	—	na
Unidad de Prevención de Desastres - UPES	—	—	—	—	—	—	—	—	—	—	○	na
Others	—	—	—	—	—	—	—	—	—	—	—	na

Note: 1) : ○ → related — → No relation na → no information

2) : 4.3 other pollutions, 4.4 Waste management,

4.5 Energy conservation and alternative energy, 4.7 Waste water management,

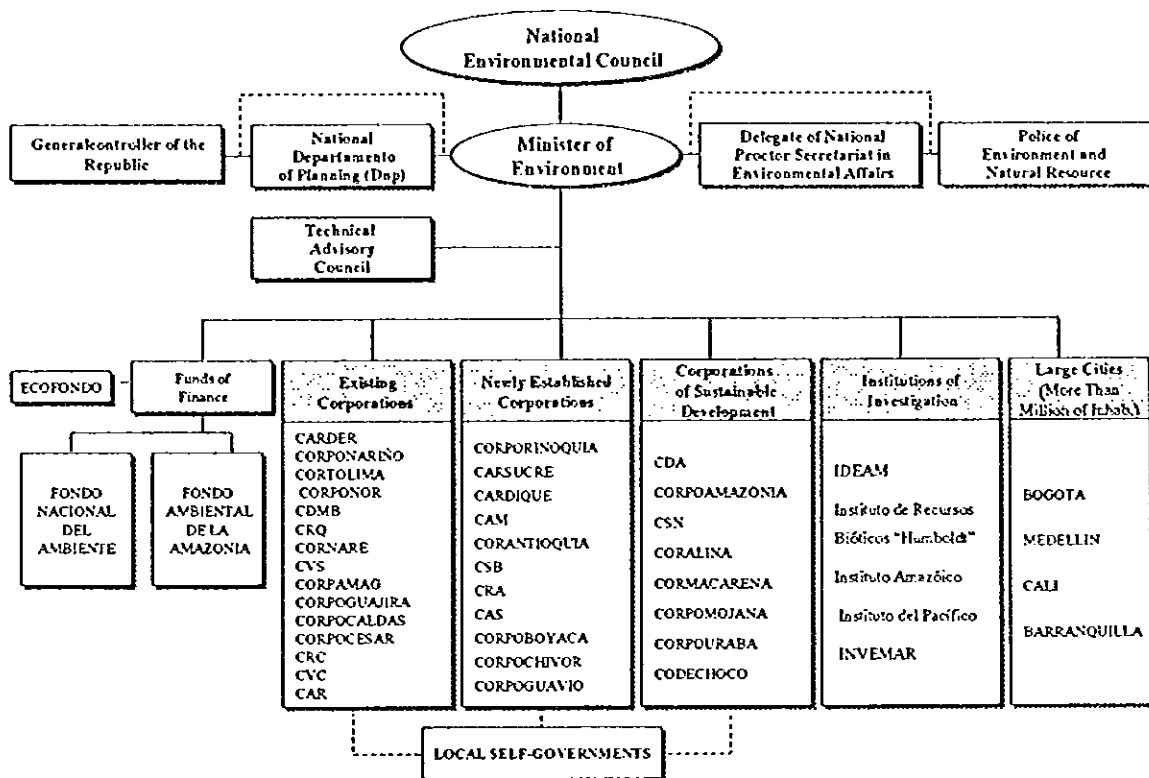
4.8 Forest conservation / desertification, 4.10 Natural resource management,

4.11 Natural disasters, 4.12 Environmental education

3) : Refer to each section related to other agencies when column "Others" is filled by ○.

(1) National Environmental System (SINA)

The SINA is National Environmental Organization System with pyramid-like structure made up of central and regional organizations created by the Law 99 of 1993. SINA is defined as an entirety of orientation, norms, activities, resources, programs and institutions that permits the post on march of the general environmental principles contained in the National Political Constitution and the Law 99 of 1993. The organizations integrated In the SINA are: the Ministry, Regional Autonomous Corporations, Local Governments, Institutions of Investigation and Financial Funds. The National Environmental Council has the purpose to insure the coordination within the component organizations in the public ambit of policies, plans and programs in environmental material and renewable natural resources.



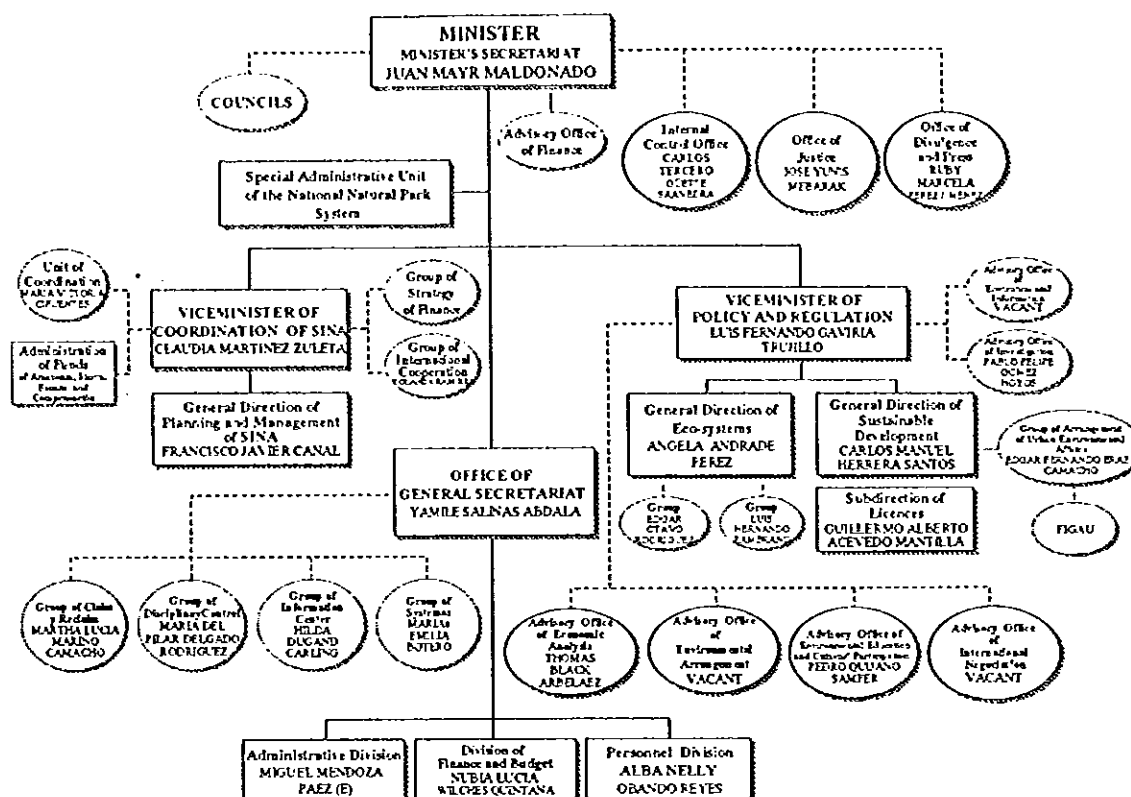
Source: a)

National Environmental Organization System (SINA) (Law 99 of 1993)

(2) Ministry of Environment

The Ministry of Environment is the supreme environmental authority established in 1993 by the Law 99 of 1993.

The objectives are to impel environmental policy and regulations for the purpose of insuring sustainable development subjecting recuperation, conservation, protection, planning, management, use and utilization of renewable natural resources and national environment. The ministry reserves, delimits, subtracts and administers the areas that are integrated in the System of National Natural Parks. The ministry also coordinates, promotes and orients actions of investigation about environment and renewable natural resources. Besides the ministry fixes general guidelines of conservation, preservation, use, planning and y direction of the hydrographic river basins and areas of management as well. (Law 99 of 1993)



Source: a)

The Structure of the Ministry of Environment

3.1.2 Non-governmental Organization (NGO)

Name of NGO	Established year	Main activities
• Corporación ECONOFONDO	(no information)	(no information)
• Fondo Financiera Energética Nacional (FEN)	(no information)	(no information)
• Fundación para la Investigación y Protección del Medio Ambiente (FIPMA)	(no information)	(no information)
• Fundación Amigos de la Macarena	(no information)	(no information)
• Fundación Ecosistemas Andinos	(no information)	(no information)
• Colegio Verde Villa de Leyva	(no information)	(no information)
• Corporación Parque Museo del Páramo	(no information)	(no information)

Source: a)

3.2 National Environmental Policy

Policy/Project Name and Contents	Funding or Implementing Agency
IDEAM (Instituto de Hidrología, Meteorología y Estudios Ambientales) • to obtain, analyze, study, process and disclose the information related to physical environment.	(no information)
Institute of Humboldt (Instituto de Investigaciones de Recursos Biológicos "Alexander von Humboldt") • to obtain, analyze, study, process and disclose the information related to Biological diversity.	(no information)
INVMAR (Instituto de Investigaciones Marinas y Costeras José Benito Vives de Andreis) • investigation about the renewable natural resources and environment in marine and coastal ecosystems.	(no information)
Institute of Amazons (Instituto Amazónico de Investigaciones Científicas "SINCHI") • biological and social investigation in the Amazon Region.	(no information)
Institute of the Pacific (Instituto de Investigaciones Ambientales del Pacífico "John von Neumann") • investigation about environment of Pacific Littoral. (Law 99 of 1993)	(no information)

Source: a)

Regional Autonomous Corporations

Corporacion	SEDE Municipio y Departamento
Corporación Autónoma Regional de Risaralda (CARDER)	Pereira (Risaralda)
Corporación Autónoma Regional de Nariño (CORPONARINO)	Pasto (Nariño)
Corporación Autónoma Regional de la Frontera Nororiental (CORPONOR)	Cúcuta (Norte de Santander)
Corporación Autónoma Regional del Tolima (CORTOLIMA)	Ibagué (Tolima)
Corporación Autónoma Regional del Quindío (CRQ)	Armenia (Quindío)
Corporación Autónoma Regional de la Cuencas de los Ríos Rionegro y Nare (CORNARE)	Santuario (Antioquia)
Corporación Autónoma Regional de los Valles Sinú y San Jorge (CVS)	Montería (Córdoba)
Corporación Autónoma Regional de la Orinoquía (CORPORINOQUIA)	Yopal (Casanare)
Corporación Autónoma Regional de Sucre (CARSUCRE)	Sincelejo (Sucre)
Corporación Autónoma Regional del Centro de Antioquia (CAM)	Medellín (Antioquia)
Corporación Autónoma Regional del Centro de Antioquia (CORANTIOQUIA)	Medellín (Antioquia)
Corporación Autónoma Regional del Atlántico (CRA)	Barranquilla (Atlántico)
Corporación Autónoma Regional de Santander (CAS)	San Gil (Santander)
Corporación Autónoma Regional de Boyacá (CORPOBOYACA)	Tunja (Boyacá)
Corporación Autónoma Regional de Chivor (COPOCHIVOR)	Garagoa (Boyacá)
Corporación Autónoma Regional del Guavio (CORPOGUAVIO)	Gachala (Cundinamarca)
Corporación Autónoma Regional del Canal del Dique (CARDIQUE)	Cartagena (Bolívar)
Corporación Autónoma Regional del Sur de Bolívar (CSB)	Magangué (Bolívar)
Corporación Autónoma Regional del Magdalena (CORPOMAG)	Santa Marta (Magdalena)
Corporación Autónoma Regional del César (CORPOCESAR)	Valledupar (César)
Corporación Autónoma Regional de la Guajira (CORPOGUAJIRA)	Riohacha (Guajira)
Corporación Autónoma Regional de Caldas (CORPOCALDAS)	Manizales (Caldas)
Corporación Autónoma Regional del Cauca (CRC)	Popayán (Cauca)
Corporación Autónoma Regional del Valle del Cauca (CVC)	Cali (Valle del Cauca)
Corporación Autónoma Regional de Cundinamarca (CAR)	Bogotá (Cundinamarca)
Corporación Autónoma Regional de Defensa de la Meseta de Bucaramanga (CDBM)	Bucaramanga (Santander)
Corporación para el Desarrollo Sostenible del Norte y Oriente Amazónico (CDA)	Puerto Inirida (Guania) San José del Guaviare y Mitú (Vaupés)
Corporación para el Desarrollo Sostenible del Sur de la Amazonía (CORPOAMAZONIA)	Mocoa (Putumayo) Leticia (Amazonas) Florencia (Caquetá)
Corporación para el Desarrollo Sostenible de la Sierra Nevada de Santa Marta (CSN)	Valledupar (César) Riohacha (Guajira)
Corporación para el Desarrollo Sostenible del Archipiélago de San Andrés, Providencia y Santa Catalina (CORALINA)	San Andrés Isla
Corporación para el Desarrollo Sostenible del Area de Manejo Especial de la Macarena (CORMACARENA)	Villavicencio (Meta) Granada (Meta)
Corporación Autónoma Regional para el Desarrollo Sostenible del Chocó (CODECHOCO)	Quibdó (Chocó)
Corporación para el Desarrollo Sostenible de Urabá (ORPOURABA)	Apartadó (Antioquia)
Corporación para el Desarrollo Sostenible de la Mojana y el San Jorge (CORPOMOJANA)	San Marcos (Sucre)

Source: a)

3.3 Environmental Laws & Regulations

Laws & Regulations	Status	Related Sections
Decree 1710 (1960) • Establishment of Regional Autonomous Corporation of Valle del Magdalena y Sinú	(no information)	
Decree 2420 (1968) • Establishment of INDERENA (Instituto Nacional de los Recursos Naturales Renovables y del Ambiente)	(no information)	
Law 23 (1973) • Establishment of the Fundamentals of Environment and Natural Resources.	(no information)	
Decree 2811 (1974) • The Code of Environment and Natural Resources	(no information)	4.10
Decree 0877 (1976) • Permission and Concession of Forests	(no information)	4.8
Decree 0622 (1977) • System of National Parks	(no information)	4.8, 4.9

Laws & Regulations	Status	Related Sections
Decree 1337 (1978) • Environmental Education and Service	(no information)	4.12
Decree 1415 (1978) • Commission of Ministry of Health - INDERENA	(no information)	
Decree 1451 (1978) • Quality of Inland Water	(no information)	4.12
Decree 1608 (1978) • Fauna and Wild Lives	(no information)	
Decree 1681 (1978) • Fishery and Hydro-biological resources	(no information)	
Decree 1715 (1978) • Protection of Landscape	(no information)	
Decree 1875 (1979) • Marine Contamination	(no information)	4.2
Law 9 (1979) • Code of Health	(no information)	
Decree 0100 (1980) • Code of Penalty for Environmental Crimes	(no information)	
Decree 2857 (1981) • Management of River Basins	(no information)	
Law 56 (1981) • Recuperation of River Basins for Hydroelectricity	(no information)	
Decree 0002 (1982) • Contamination of Air	(no information)	4.1
Decree 1014 (1983) • Permissions and Concessions of Forestry	(no information)	4.8
Decree 2104 (1983) • Management of Waste	(no information)	4.4
Decree 1594 (1984) • Contamination of Water	(no information)	4.2
Decree 0002 (1985) • Contamination of Air	(no information)	4.1
Law 76 (1985) • Regional Planning	(no information)	
Law 12 (1986) • Decentralization	(no information)	
Decree 2477 (1986) • Requirement of Declaration of Environmental Effects (DEA) for Mining	(no information)	
Decree 0077 (1987) • Decentralization	(no information)	
Resolution 0017 (1987) • Proctor for Agriculture	(no information)	
Resolution 9136 (1987) • Commission Environmental of the Ministry of Public Works	(no information)	
Law 30 (1988) • Reform of Agriculture	(no information)	
Decree 2655 (1988) • Code of Mining	(no information)	
Decree 0501 (1989) • Re-organization of Agricultural Sector	(no information)	
Decree 1974 (1989) • Districts of Integral Management	(no information)	
Decree 2410 (1989) • Creation of Division of Environmental Policy	(no information)	
Law 9 (1989) • Urban Reform	(no information)	
Law 37 (1989) • Environmental Service of Forestry	(no information)	4.8
Law 13 (1990) • Fomentation of Fishery	(no information)	
Decree 0222 (1990) • Re-organization of INDERENA	(no information)	

Laws & Regulations	Status	Related Sections
Decree 0775 (1990) • Management of Pesticide	(no information)	
Decree 0471 (1990) • Re-organization of the Ministry of Health	(no information)	
National Constitution (1991) • Obligation of the State and Right of Citizens for Sound Environment.	(no information)	
Law 99 (1993) • Creation of the Ministry of Environment and SINA	(no information)	
Decree 1600 (1994) • Regimentation of SINA	(no information)	
Decree 1603 (1994) • Organization and Establishment of the Institutions of Alexander von Humboldt, SINCHI y John von Neumann	(no information)	
Resolution 0189 (1994) • Regulation for Impediment of Dangerous Waste	(no information)	
Decree 0948 (1995) • Atmospheric Contamination and Protection of Quality of Air	(no information)	4.1
Resolution 1292 (1995) • Declaration of the Sanctuary of Fauna and Flora of Mapelo	(no information)	4.9
Resolution 1315 (1995) • Regulation of Authorization of Permission of Forestry CORPOAMAZONIA	(no information)	4.8
Resolution 0005 (1996) • Permissive Level of Contaminant in Mobile Origin of Gasoline and Diesel	(no information)	
Resolution 0916 (1996) • Declaration of the Sanctuary of Fauna and Flora of Otú-Quimbaya	(no information)	4.9
Decree 1791 (1996) • Regime of Forestry Utilization	(no information)	4.8
Decree 0900 (1997) • Certification of the Incentive for Conservation of Forests	(no information)	4.8

Source: a)

4. STATE OF THE ENVIRONMENT

4.1 Air Pollution

The total emission of substance of gas in Colombia in 1996 is in the order of 8.612 kt, in which occupies carbon monoxide 58%; methane 21%; particles 8%; and volatile organic compost 3%.

The industrial activities in Colombia are found in populated urban areas principally in the cities of Santafé de Bogotá, Medellín, Cali, Barranquilla and Cartagena, where present air pollution with circulation of the major part of automobiles. Barrancabermeja and Sogamoso are very polluted cities, the former is of petrochemical industries, and the latter is of metalliferous industry and carboniferous activities.

It is estimated that in 1996 approximately 84 % of nitrogen monoxide (NO) generated in the country was emitted in the urban centers, also 47 % of carbon monoxide, 58 % of nitrogen oxides (Nox), 37 % of methane, and almost 100% of volatile organic compost, sulfur oxides and particulate materials.

In the city centers the annual emission of particles is about 716 kt generated principally by combustion of fixed sources (62%) while 36% is by industrial processes. The nitrogen oxides is in the order of 252 kt and its emission is by fixed sources (57%) and by mobile sources (37%); the emission of sulfur oxides is about 568 kt, 89% by fixed sources.

Concerning emission by mobile sources In the city centers, volatile organic compost is 260 kt, carbon monoxide 1.155 kt, nitrogen oxides 92 kt, which are equivalent to 98%, 23% and 31% respectively of the estimated total emission of each gas. The transportation of automobiles is responsible for 98% of the emission of aldehydes, carbon monoxide, hydrocarbons, nitrogen oxides and sulfur oxides. (IDEAM, 1998)

These pollutants are related to the characteristics of fuel. Colombian gasoline contains considerable sulfur and olefins, that are originators of the dioxide of sulfur and photochemical smog. Colombian government is trying to reduce these substances to 0.01% of sulfur and 5% of olefins as the maximum as the gasoline of the United States.

Source: a)

Related Agency	
<i>National Level:</i>	
①	Ministerio del Medio Ambiente
②	Ministerio de Minas y Energía
<i>Local Level:</i>	
③	Corporaciones Autónomas Regionales
④	Departamento Administrativo del Medio Ambiente

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Law on air pollution	?	
② Ambient air quality standard	?	
③ Emission standard (stationary and/or mobile sources)	?	
④ Environmental monitoring results	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

4.2 Water pollution

The highest concentration of sedimentation corresponds to the Andean Region, where are distinguished by lower part of River Chicamocha, the River Basin of Minero, higher zone of River Upía with concentration of more than 2,000 mg/liter of sedimentation. Whereas in the densely forested zones like Amazonas and the Pacific Slope and zones of páramo present only until 100 mg/liter.

The major cause of water pollution in Colombia is domestic wastewater followed by industrial waste. The rivers highly polluted by organic matter are the rivers of Bogotá, Cauca, Pamplonita and Pasto, that receive domestic wastewater from big cities and also liquid and solid waste of industries. (For example, in Bogotá River, the value of BOD is from 100 to 150 mg/liter at the lower sites where receive the wastewater of the capital city.)

The polluted river basins and areas of waters by industrial poisonous waste are Bogotá - Soacha, Medellín - Itagüí, Cali - Yumbo, Sogamoso - Duitama - Nobsa, Barranquilla - Soledad, Cartagena - Mamonal.

Water of the Rivers Chicamocha, Pamplonita and César contain soluble salt, which limits the utilization for irrigation and cultivation. (Estudio Nacional del Agua, IDEAM, 1998)

Source: a)

Related Agency
<i>National Level:</i>
① Ministerio de Salud
② IDEAM
<i>Local Level:</i>
③ Corporaciones Regionales
④ DAMA

Source: a)

Water Pollution in the Magdalena River Basin
The River of Magdalena has 1,550 km of length, the 5th longest in South America, 256,622 km ² of area of basin, and 5,690 m ³ /sec. of volume of flow at the river mouth (Calamar Hydrological Station). The haedstream of the river grows in a small lake named La Magdalena in the department of Huila and flows from south to north crossing the departments of Tolima, Cundinamarca, Boyacá, Caldas, Antioquia, Santander, César, Bolívar, Magdalena and Atlántico. The river is so important that within the basin there are almost two thirds (2/3) of total population of the country including 3 largest cities of Bogotá, Medellín and Cali.
The River of Bogotá discharges sewage of Bogotá, the River of Medellín that of Medellín, the River of Cauca that of Cali, Palmira and Buga, and together with other 31 principal branches, the Magdalena River gathers waste water of 24 millions of inhabitants and transports to the Caribbean Sea by 13,311 tons/day of organic material at the river mouth (Calamar Hydrological Station). (El Medio Ambiente en Colombia, IDEAM, 1998)
What is very serious is that there is almost no water purification plant existing within the basin (there is only one plant in Bucaramanga, which is dealing with the half of wastewater produced from the city). And further more the water is source of water supply for the cities along the river especially for the Caribbean cities like Barranquilla (1,100,000 of inhabitants) and Cartagena (700,000 of inhabitants).

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Law on water pollution	?	
② Water quality standard	?	
③ Effluent standard	?	
④ Drinking water standard	?	
⑤ Water quality monitoring	?	
⑥ Guidelines on water quality	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

4.3 Other Pollution

The contamination of noises is preoccupied in the big cities like Santafé de Bogotá, Cali, Medellín Barranquilla, Pereira and so on, by increase of vehicle transportation. (For example, in Bogotá the value of noise shows 105 dB at some intersections in the city)

In Colombia there is neither environmental study nor information about contamination of soil, underground water, dioxin, photochemical smog and acid rain, which are very probably exist in this country.

Source: a)

Related Agency
① Ministerio del Medio Ambiente
② Ministerio de Salud

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Law on noise	?	
② Standard on noise level	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

4.4 Waste Management

Colombia is known as a rich country of water resource, according to the information of the Institute of World Resources and United Nations the disposability per person of Colombia is 33,630 cubic meters annual, more than 4 times as big as the world average (6,700m³). (cf. North America 6,300 m³; Europe 4,700 m³; Africa 6,500 m³; Asia 3,400 m³). But this statistic data is a little bit tricky because the main regions of abundant water are only lower parts of the country; the Regions of Amazons, Orinoco and Pacific, where are much less populated than the Andean Region.

Until only recent decades it was not considered that there existed significant problems of water supply in various uses in the cities and economic activities. However, the situation emerges every time more serious in evident problems of disposability, including the limit of quality, cutting-off the supply operated in the local municipalities, affecting the quality of life and economic activities, which are because of the increase of consumption, above all rapid increase of deforestation, short of adequate management of river basins, equally the absence of almost no treatment of water waste. (IDEAM, 1998)

Source: a)

Related Agency
<i>National Level:</i>
① Ministerio del Medio Ambiente
② Ministerio de Salud
③ IDEAM
<i>Local Level:</i>
④ Corporaciones Autónomas Regionales

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws on waste	?	
② Laws on hazardous waste	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

4.5 Energy Conservation and Alternative Energy

Electricity

In Colombia during the period between 1975-1996 the demand of the primary energy presented the annual rate of increase of 3.10%, whereas during the same period that of non renewable energy was 5.14% annually.

The generation and demand of electric energy has increased in 19 years between 1973 and 1992 with 75 % or 2.99 % annually.

The effective capacity of generation of electricity in 1996 is 10,601 MW, in which 8,016 MW (76%) is of hydraulic generation and 2,584 MW (24%) is of thermal.

The generation of electric energy depends on hydraulic generation and the change of climate; there was electric cut-off from March of 1992 to April of 1993, during this period the supply was cut down by 6.100 GWH approximately. After this crisis the Emergency Program of Expansion of Generation and Transmission is going on for the period of 1993-2000. (Atlas Geográfico de Colombia, IGAC, 1995 / El Medio Ambiente en Colombia, IDEAM, 1998).

Petroleum

In the extraction of petroleum of the country in 1993 occupies the department of Arauca the first place with production annual of 73 millions of barrels approximately, followed by Huila (23 millions), Casanare (19 millions), Meta (18 millions), Santander (10 millions), Antioquia (9 millions) and Putumayo (6 millions).

The principal plants of refinery are located in the cities of Barrancabermeja in the middle of the Magdalena River and Cartagena fronting the Caribbean Sea. (Atlas Geográfico de Colombia, IGAC, 1995)

Natural Gas

The reserve of natural gas is estimated 235 thousand million cubic meters, which location is principally in the Oriental Plains, the Region of Piedemonte, the Magdalena Valley and the Caribbean Coastal Zone. As the actual production the department of Guajira represents 64% and the department of Santander 24%.

The government undertakes the program of popularization of the domestic service of natural gas aiming to reduce the consumption of electricity, petroleum and charcoal, at the same time utilization of natural gas for thermal generation of electricity especially in the departments of the coastal Caribbean Region. (*El Medio Ambiente en Colombia, IDEAM, 1998*).

Coal

The reserve of coal is estimated 10,056 million tons, which corresponds to 2 % of world reserve. The 59 % of the national reserve is thermal type coal: by the inferior proportion thermal-cokable type. The department of Guajira possesses 61% of total reserve followed by the department of César with 25%. The principal vein of coalfield are in the following departments: La Guajira. César, Córdoba - Bolívar, Norte de Santander - Santander. Cundinamarca - Boyacá. Antioquia - Caldas. Valle del Cauca - Cauca. Andean border of the Oriental Plains and Amazons.

Coal is still important coming after petroleum as resource of primary energy. The 75% of the mining are exported, the rest is sent to coke plants and thermal electric centers.

Source: a)

Related Agency
<i>National Level:</i>
① Ministerio del Medio Ambiente
② ECOPETROL
③ Ministerio de Minas y Energía
④ Ecocarbon
⑤ ISA
<i>Local Level:</i>
⑥ Corporaciones Autónomas Regionales

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws on energy use and conservation	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

4.6 Water Supply

In Colombia more than 40% of the population do not have domestic service of potable water supply, neither water duct nor purification plant. According to the National Department of Planning (DNP) the coverage of water supply in 1992 is 86% (19.7 millions of beneficiaries) in the urban areas and 32 % (3.5 millions of beneficiaries) in the rural areas, in the national level the coverage is 68%. According to the National Census of 1993, the majority of the departments do not have more than 50% of coverage in the houses of rural areas.

The cities like Santa Marta, Pasto and Tunja are suffering permanently from cut-off of the service because of exhaustion of the resource. The cities of lowest coverage in the recent years are Montería, Villavicencio, Yopal y San José del Guaviare because of rapid increase of immigration of domestic refugees of the struggles of guerrillas.

In Colombia there exists more than 800 plants of treatment, only less than 10% of which are supplying water within international standard of potability. The Caribbean coastal cities like Barranquilla, Cartagena, etc. depend on the resource of water of Magdalena River, in which flow in the water waste of the 2/3 parts of the total population without treatment, the quality of which is in very difficult condition. (*El Medio Ambiente en Colombia, IDEAM, 1998*).

Source: a)

Related Agency
<i>National Level:</i>
① Ministerio del Medio Ambiente
② IDEAM
<i>Local Level:</i>
③ Corporaciones Autónomas Regionales
④ Empresas de Acueductos

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws on water resources and supply	?	
② Laws on use of water resources	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

4.7 Waste Water Management

In Colombia it is estimated that the total substance of pollution discharged to waters is in the order of 690 kt of BOD and 1,500 kt of Suspended Solids, major part of which is of domestic origin by 527 kt of BOD and 1,400 kt of SS.

More than 95% of municipalities do not have any adequate treatment of water to discharge wastewater to rivers or seas. Among the principal cities only Bucaramanga (500,000 of population) has a treatment plant which capacity is 2,400 cubic meters daily equivalent to the half of the total sewage of the city.

Source: a)

Related Agency
<i>National Level:</i>
① Ministerio de Salud
<i>Local Level:</i>
② Corporaciones Autónomas Regionales

Source: a)

The final disposition place of water waste of the 645 municipalities is shown below:

FINAL DISPOSITION OF WATER WASTE OF 645 MUNICIPALITIES				
Waters of Final Disposition	Number de Municipalities	%	Population	%
Superficial Current	474	74	18,200,705	80
Soil	88	14	1,252,476	6
Sea	7	1	1,172,705	5
Lakes	41	6	967,394	4
Submarine Emission	2	0.3	662,176	3
No Information	33	5	631,301	3
TOTAL	645	100	22,886,757	100

Source: National Inventory of Quality of Water 1997. Departmental Directions of Health, Ministry of Health

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws on sewerage system	?	
② Laws and regulations on industrial effluent	?	
③ Effluent standard	?	
④ Results of monitoring	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

4.8 Forest Conservation / Desertification

In Colombia 69% of the continental territory has ecological aptitude of forests, however only 46% of it is actually forests. Considerable percentage of land of aptitude of forests is incorporated to use of agriculture and cattle raising. And inadequate management produces loss of fertility, erosion and the alteration of river basins. Even though there is no precise information about the magnitude of the deforestation in the country, it is estimated that Colombia has one of the 5 highest rates of deforestation of tropical rainforest in the world.

The causes of the deforestation are, in order of incident, the expansion of the front of agriculture and cattle raising, the colonization, the construction the works of infrastructure, the illicit cultivation, the consumption of firewood, forest conflagration and cutting down for wood. The order of incident varies in each region.

The firewood is principal domestically utilized in rural areas because of lack of other energetic alternatives. Firewood is especially used in the sector of production of unrefined sugar cake. In recent years the annual consumption of firewood is estimated 11 millions of tons concentrated in the Andean and Caribbean Regions.

The illicit cultivation has destroyed thousands of hectares of forests. In 1994 there are 385 municipalities that are affected by illicit activities. It is calculated that every hectare of plantation of coca destroys 2 hectares of forest, and every hectare of poppy destroys 2.5 hectares. According to an estimation in the year of 1992, 11,000 ha of primary forests were cut down to cultivate poppy.

The industrial and commercial supply of wood has not been done on the basis of sustainable criteria. It is estimated that between 40,000 ha and 68,000 ha of natural forest was affected annually by industrial supply of wood. More than 50% of the primary material of the country is originated to natural forest of the Pacific Coastal Region. Because of the limited competition, inadequate technology and low-developed technology, the sector of forestry is characterized in the low quality and efficiency. The major part of the production is for the inner market. The commercialization of the industry of forestry presents considerable delay of development especially in the field except wood. The lack of adequate utilization and commercialization of the non-wood industry has contributed the degradation of forests.

The system of permission and concession in the policy of administration of forests has favored the proliferation of permissions and concession without any rigor and strictness especially in small exploitation of short period of duration assigned by volume of wood not by area, which caused very low efficiency in extraction of wood. The inappropriate extraction of tropical forests, the impossibility of the environmental authorities in actuating against incomppliance of the compromise, technical difficulty of responsible entities in pursuit of permissions and concessions have brought the utilization of forests in low environmental specifications.

The efforts of the country in the conservation of eco-systems of forests has created 7 areas for reserve forests by the law 2 of 1959, the 45 areas of the System of National Parks, the 57 areas of Reserve of Forest for Protection, and some Regional Reserves.

In Colombia there exists very dry region in the department of La Guajira with annual precipitation of 200 mm or so, but the phenomena of so-called desertification is not remarkable in the region.

Source: a)

Related Agency
<i>National Level:</i>
① Ministerio del Medio Ambiente
<i>Local Level:</i>
② Corporaciones Autónomas Regionales

Source: a)

Estimated Area of Illicit Cultivation of Coca (ha)

Department or Cultivation Base	Guaviare	Caqueta	Putumayo	Serrania De San Lucas
1991	21,400	8,600	2,200	5,300
1992	22,900	8,400	2,400	3,400
1993	24,100	9,300	4,000	2,300
1994	26,300	11,700	5,000	2,000
1995	28,700	15,600	6,600	-
1996	38,600	21,600	7,000	-
1997	29,000	31,500	19,000	-

Source: Plan de Manejo Ambiental Erradicación de Cultivos Ilícitos, 1998 (a)

Estimated Area of Illicit Cultivation of Poppy (ha)

Department or Cultivation Base	Huila	Tolima	Serrania Del Perija	Cauca	Otros	Total
1991	870	1,015	290	435	290	2,900
1992	6,000	7,000	2,000	3,000	2,000	20,000
1993	2,850	3,325	950	1,425	950	9,500
1994	1,860	2,170	620	930	620	6,200
1995	205	1,445	195	235	100	2,180
1996	200	1,300	350	250	-	2,100
1997	200	1,300	450	150	100	2,200

Source: Plan de Manejo Ambiental Erradicación de Cultivos Ilícitos, 1998 (a)

Execution of Eradication of Illicit Cultivation

Year	POPPY (HA)		COCA (HA)	
	Manual	Aspersion by Air	Manual	Aspersion by Air
1991	1,497	-	459	-
1992	2,583	10,281	944	-
1993	1,592	8,229	846	-
1994	1,777	3,537	1,033	3,871
1995	1,608	3,467	1,487	23,915
1996	528	6,885	4,507	18,519
1997	9,603	6,421	20	29,939

Source: Plan de Manejo Ambiental Erradicación de Cultivos Ilícitos, 1998

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws on forest conservation	?	
② Laws and regulation on protection area	?	
③ Laws on desertification	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

4.9 Biological Diversity

Colombia is the second richest country in biological species in the world coming after Brasil, which possesses more species but its superficial territory is seven times as big as Colombia. Generally one of each 10 species of fauna and flora of the world inhabit in Colombia, which occupies only 0.8% of area of land in the world.

In the case of flora Colombia possesses between 45.000 and 55.000 species of higher plants, approximately the two thirds of which are endemic. It is detached that there are 3,500 species of orchids equivalent to 15% of world Orchideaceae.

In the case of vertebrates Colombia occupies the third place with 2.890 species, in which are 1,721 species of birds equivalent to 20% of total species of the world, 358 species of mammals corresponding to 7% of the world, 6 % of reptiles and 10 % of world amphibians.

Colombia has very rich biological diversity, however the country lacks considerably in the basic scientific studies, technical utilization, programs of conservation, recuperation and sustainable management of the genetic resources.

Source: a)

Related Agency	
National Level:	
①	Sistema de Parques Nacionales, Ministerio del Medio Ambiente
②	Instituto Alexander von Humboldt
Local Level:	
③	Corporaciones Autónomas Regionales

Source: a)

Ecological Regions

Region	Sub-Region	Area (Km ²)	%	General Characteristics
Andean	Cordillera Oriental	372.000	33	The Andean Region includes the Occidental, Central and Oriental Cordilleras, the valleys of inter-cordilleras: Basins of Cauca River and Magdalena River. This region is economically and culturally the most important area of the country with major concentration of population. Its climate varies depending on altitude and topographic aspects.
	Cordillera Central			
	Cordillera Occidental			
	Fosa del Cauca - Patía.			
	Fosa del Magdalena			
Amazons	Macizos Volcánicos recientes	331.000	29	The Amazons Region presents a great homogeneity of plain topography and tropical climate. It contains departments of Guanía, Guaviare, Vaupés, Putumayo and Amazonas.
	Sierra Nevada de Sta. Marta			
Orinoquía	Catatumbo	266.000	23	The Region of Orinoquía is an extensive plain between the Rivers of Guaviare, Arauca and Orinoco. It contains the departments of Arauca, Casanare, Meta and Vichada.
	Llanura Amazónica			
Caribbean	Saliente del Vaupés	101.000	9	The Caribbean Region is located in the northern part of the country, it presents generally plain topography and hot and dry climate. It contains the departments of Guajira, Magdalena, Atlántico, Bolívar, Sucre, Córdoba and Antioquia.
	Orinoquía mal drenada			
	Orinoquia bien drenada			
	Andén Orinoqués			
	Península de la Guajira			
Pacífico	Llanura aluvial	71.000	6	The Pacific Region is of the most humid climate in the world, generally more than 5.000 mm of annual precipitation, more than 9.000 mm in some areas. The temperature is above 27°C and the vegetation is hydrophylic rain forest. It contains the department of Chocó and partially the departments of Valle, Cauca and Nariño.
	Colinas			
	Delta del Magdalena			
	Depresión inundable			
Insular	Sinú y otras	< 1.000	0	Island Region contains various islands in the Pacific Ocean and Caribbean Sea including the Archipelago of San Bernardo, the Archipelago of Rosario, the Archipelago of San Andrés, Providencia and Santa Catalina, the islands of Fuerte, Tortuguilla, Bar, Tierra Bomba, Gorgona, Gorgonilla, El Gallo, El Morro and the islet of Malpelo.
	Mar Caribe			
	Océano Pacífico			
TOTAL		1.142.000 Km ²		

Source: Atlas Geográfico y Geografía de Colombia, 1995 (a)

National Natural Parks

Name	Location (Department)	Area (Ha)
Amacayacu	Amazonas	294,000
Cahuinari	Amazonas	576,000
Catatumbo - Bari	Norte de Santander	158,000
Cordillera de Los Picachos	Caquetá, Meta	439,000
Cueva de Los Guácharos	Huila	9,000
Chingaza	Cundinamarca, Meta	50,000
Chiribiquete	Caquetá, Guaviare	1,280,000
El Cocuy	Boyacá, Arauca	306,000
Tuparro	Vichada	548,000
Ensenada de Utría	Chocó	54,000
Farallones de Cali	Valle	150,000
Gorgona	Cauca (Océano Pacífico)	49,000
Isla de Salamanca	Magdalena	21,000
La Paya	Putumayo	422,000
Las Hermosas	Tolima, Valle	125,000
Las Orquídeas	Antioquia	32,000
Corales del Rosario	Bolívar	20,000
Los Katíos*	Antioquia, Chocó	72,000
Los Nevados	Caldas, Quindío, Risaralda y Tolima	38,000
Macuira	La Guajira	25,000
Minchique	Cauca	44,000
Nevado del Huila	Cauca, Huila y Tolima	158,000
Old Province	San Andrés, Providencia	1,000
Paramillo	Antioquia, Córdoba	460,000
Pisba	Boyacá, Casanare	45,000
Puracé	Cauca, Huila	83,000
Sanquianga	Nariño	80,000
Sierra de La Macarena	Meta	630,000
Sierra Nevada de Santa Marta	César, La Guajira y Magdalena	383,000
Sumapaz	Cundinamarca, Huila, Meta	154,000
Tamá	Norte de Santander	48,000
Tatamá	Chocó, Risaralda	54,000
Tayrona	Magdalena	15,000
Tinigua	Meta	208,000
Total		7,031,000

*Patrimonio Mundial de UNESCO

Sanctuaries of Fauna and Flora

Name	Location (Department)	Area (Ha)
Ciénaga Grande de Santa Marta	Magdalena	23,000
Galeras	Nariño	7,615
Iguaque	Boyacá	6,750
Isla de la Corota	Nariño	8
Los Colorados	Bolívar	1,000
Los Flamencos	Guajira	7,000
Guanenta-Alto Río Fonce	Santander	10,429
Malpelo	Océano Pacífico	38,971
Otún-Quimbaya	Risaralda	489

Nacional Natural Reserves

Name	Location (Department)	Area (Ha)
Nukak	Guaviare	855,000
Puinawai	Guanía	1,092,500

Unique Natural Area

Name	Location (Department)	Area (Ha)
Los Estoraques	Norte de Santander	640

Fuente: Ministerio del Medio Ambiente. UAESPNN.
Santafé de Bogotá, 1998

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws on protection for fauna and flora	?	
② Laws and regulations for protection for specific species	?	
③ Laws and regulations on hunting	?	
④ Laws and regulations on protection area	?	
⑤ Listed species in the Red Data Book	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

4.10 Natural Resource Management

In Colombia considerable areas of environmental degradation are found and also the loss of natural resources in the course of economic development with lack of appropriate management. On the other hand for the population of low economic condition the exploitation of natural resources become the only way for surviving.

According to the law all of underground mining resources like petroleum and coal belong to national patrimony.

The Code of Natural Resources and Protection of Environment was expedited in 1974 and the Ministry of Environment and SINA were established in 1993. However, because of lack of control, vigilance and adequate management the results are not successful.

Colombia lacks a lot basic scientific studies about flora, fauna and natural resources. For example, it is estimated there are more than 50,000 species of plants in this country, but only 30 % of them are barely identified, the rest is still unknown.

Source: a)

Related Agency
<i>National Level:</i>
① Ministerio del Medio Ambiente
<i>Local Level:</i>
② Corporaciones Autónomas Regionales

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws on conservation of natural resources	?	
② Laws on use and conservation of mining resources	○	?
③ Laws on underground resources	○	?

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

4.11 Natural Disaster

Colombia is located in the Pacific Seismological Ring where are found the confrontations of active tectonic plates and frequent earthquakes along the faults and submarine trough.

On the other hand the country is located in the belt of wet atmospheric movement, which produce, together with the topographic effects of the Andes Mountains, high precipitation and a lot of hydrological disasters.

In 17 years between 1979 and 1996 there were disasters in 302 municipalities of the country, 156 cases of which were inundation equivalent to 52%, followed by landslides with 32 cases; flood with 26 cases; tornadoes with thunder with 13 cases; flow of mud with 12 cases; and with 7 cases each follow collapse of slope, avalanches, conflagrations and strong winds.

In the 17 years there were 254 municipalities of disaster damage, that means 24% of the total municipalities of the country had some disasters, 48 of which were affected more than one time by disaster. The total affected area of the 254 municipalities is 2,102 km².

Source: a)

Related Agency
<i>National Level:</i>
① Ministerio del Medio Ambiente
② Unidad de Prevención de Desastres - UPES
<i>Local Level:</i>
③ Corporaciones Autónomas Regionales

Source: a)

Municipalities Affected by Disasters, Population and Number of Houses Between 1919 and 1996

Municipalities	Area Km ²	Sufferers	Families	The Missing	Dead Persons	The Wounded	Houses of Damage
254 one time	2,102	1,098,829	162,392	623	2,157	1,662	23,360
48 more than one time	277	160,975	24,461	238	25,276	622	4,137

Source: DAPD, IDEAM, 1996

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws on natural disaster	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

4.12 Environmental Education

Primary and Secondary Education

The actual situation of environmental education depends on the educational orientation of each school. The Ministry of Environment appraises and gives importance to the environmental education. There is an agreement between the Ministry of Education, with which to strengthen the field of environmental education in the schools.

The Ministry of Environment has programs to promote the classes of environment in the schools as a subject in the curriculum.

As an obligatory assignment of military or public service the activities of environmental protection is applied for high school students of the 11th grade for the graduate title.

Higher Education

There is no faculty or department specialized for environment in the Colombian universities and other institutions of higher education. Colombia lacks a lot in specialists of environment in every field especially in public sectors, universities and consultant firms.

Social Education

The Ministry of Environment is offering environmental programs in the national television of INRAVISION. The ministry is also offering information by way of Internet.

The SENA (National Vocational Center) has agreement with the ministry about the training of environmental instructors.

The principal newspapers are presenting periodically special pages of environment.

The ministry has an agreement with ICFES (Instituto Colombiano para el Fomento de la Educación Superior), to strengthen and reform environmental education in the faculties of forestry engineering and mines.

Source: a)

Related Agency
① Ministry of Education
② Universities
③ National Vocational Center (SENA)
④ ICFES (Instituto Colombiano para el Fomento de la Educación Superior)

Source: a)

Some specialty of environment in the principal universities
• Instituto de Estudios Ambientales de la Universidad Nacional de Colombia, Bogotá
• Instituto de Asuntos Ambientales. Capítulo Manizales de la Universidad Nacional de Colombia, Sede Manizales
• Instituto de los Estudios del Pacífico de la Universidad Nacional del Valle, Cali
• Centro de los Estudios Ambientales de la Universidad de Los Andes, Bogotá
• Centro de Enseñanza Desescolarizada en Tecnología en Recursos Naturales Renovables de la Universidad de Santo Tomás, Bogotá.
• Facultad del Medio Ambiente de la Universidad Antonio Nariño, Bogotá

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws on education	○	• ?
② Guidelines on environmental education	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

5. INTERNATIONAL RELATIONSHIP

(1) Environmental Relationship with Neighbouring Countries

Venezuela

Carripía - Paraguachón River Basin:

With the government of Venezuela the integrated hydrographic study was arranged in the Carripía - Paraguachón River Basin, a part of which is Colombian territory of the department of Guajira, aiming to perceive the hydrological resource that permit to establish the integral utilization and the conservation of hydrological resource for the development of various socioeconomic activities that will be carried out in the border of Colombia and Venezuela.

Orinoco River Basin:

The study of Orinoco River Basin is advanced with the government of Venezuela particularly for the purpose of hydroelectric utilization of the river, initially started in the span between Puerto Inírida (Colombia) and Puerto Nuevo (Venezuela) for hydro-climatic characterization and the quality of water.

Arauca River Basin:

The study of Arauca River Basin is advanced with the government of Venezuela for the purpose of perceiving the actual situation of the river aiming to develop joined actions to recover the navigability and stability of international limit.

Panamá

Rainforest of Darién and Katíos:

At this moment there is no environmental international treaty between the two countries. In the border there are National Park of Los Katíos and Rainforest of Darién, where is roadless but illegal transportation route for narco-traffickers. There is international agreement of control of drag.

The future plan of the second Panamá Channel will be important environmental trans-boundary Issue.

Ecuador

At this moment there is no environmental international treaty between the two countries.

Nicaragua

At this moment there is no environmental international treaty between the two countries. Nicaragua is arguing against Colombia about the possession of the Islands of San Andrés and Providencia and territorial waters.

International Environmental Cooperation

In the period between 1990 and 1996 18 % of total international cooperation to Colombia was aimed to environmental projects.

(2) Bilateral Sources

The countries that offer to Colombia technical or financial cooperation are: Germany, Canada, Quebec, Spain, France, Italy, United Kingdom, Low Countries, Switzerland, Japan, Sweden, United States and China. The International cooperation of bilateral sources represents 69 % of the total of international cooperation in the period between 1982 and 1996.

The environmental projects of Germany, Canada, Quebec, Spain, France, Holland and United States are going on.

For further information:

Internet: <http://www.sinpro.gov.co/minambiente/Acciones/Coop.../SECTOR%20AMBIENTAL.ht>

(3) Multilateral Sources

Colombia receives multilateral cooperation from United Nations' Organizations, European Union, the Organization of American States, Inter-American Development Bank and the World Bank (IBRD). The International cooperation of multilateral source represents 31 % of the total of international cooperation in the period between 1982 and 1996.

5.1 International Convention

Name of international Convention	Year
1) Declaration of Rio de Janeiro about Environment and Development. (Agenda 21)	(no information)
2) Agreement of the United Nations about Biological Diversity	1992
3) Convention about International Commerce of Wild Species in Danger of Fauna and Flora.	(no information)
4) Treaty of Amazon Cooperation	(no information)
5) Convention for the Protection of Cultural and Natural World Patrimony	(no information)
6) International agreement of Tropical Wood	1983
7) Agreement of Vienna for the Protection of the Ozone Layer	(no information)
8) Convention of Frame of United Nations about the Change of Climate	(no information)
9) Relative Protocol to the Prohibition of Employ of Suffocating, Toxicant Gas or Similar Gas and Bacteriological Measures in the War	(no information)
10) Convention about the Prohibition of Development, Production and Storage of Bacteriological (Biological) and Toxicant Arms and about their Destruction	(no information)
11) Agreement for the Protection of Marine Environment and the Coastal Zone of the Southeast Pacific	(no information)
12) Agreement about Regional Cooperation for the Combat against the Contamination of Hydrocarbon and other Noxious Substance in the Cases of Emergency in the Southeast of Pacific Ocean	(no information)
13) Complementary Protocol of the Agreement about Regional Cooperation for the Combat against the Contamination of Hydrocarbon and other Noxious Substance in the Southeast of Pacific Ocean	(no information)
14) Protocol for the Protection of the Southeast Pacific against the Contamination originated from the Terrestrial Sources	(no information)
15) Annexes I, II and III of the Protocols of Southeast Pacific	(no information)
16) Convention about Continental Platform	(no information)
17) Convention about Fishery and Conservation of the Biological Resources in the Deep Sea	(no information)
18) Agreement of Fishery between the Republic of Colombia and Jamaica	(no information)
19) Agreement for the Protection and Development of Marine Environment in the Region of Gran Carib	(no information)
20) Protocol correspondent to the International Agreement about the Civil Responsibility of Damage caused by Contamination of Water by Hydrocarbon in the Sea	1969
21) International Agreement about the Civil Responsibility of Damage caused by Contamination of Water by Hydrocarbon in the Sea	(no information)
22) Protocol of Cooperation for the Combat of Leakage of Hydrocarbon Environment in the Region of Gran Carib, United Nations	1983

Source: a)

5.2 International Cooperation Project

Name of Project (Project cost: million dollars)	Period	Donor/South African lead agency
(no information)		

Source: a)

6. INFORMATION SOURCE

6.1 Public Governmental

Name of Organization	Contact Address
a) Ministerio de Agricultura y Ganaderia (MAG)	<ul style="list-style-type: none"> • Colegio La Salle Sabana Sur P.O.Box 10094-1000 San Jose Tel. 232-9420, Fax. 232-2103 Tel. 231-2344 ext. 325, Fax. 296-2586 Tel. 231-2344 ext. 334, Fax. 296-0858 Tel. 231-2344 ext. 337, 296-2495, 231-2625, Fax. 296-0858
b) Ministerio del Ambiente y Energia (MINA E)	<ul style="list-style-type: none"> • 200 este y 50 sur de la Corte Suprema de Justicia P.O.Box 10094-1000 San Jose Tel. 233-4533, 2571417, Fax. 257-0697 • Costado Norte de Emergencias del Hospital Calderon Guardia P.O.Box 73350-1000 San Jose Tel. 258-2621, Fax. 233-1791 • Sabanilla de Montes de Oca, del Campo Deportivo UCR 300 este P.O.Box 10104-1000 San Jose Tel. 225-6627, Fax. 225-3691 • Sabanilla de Montes de Oca, del Campo Deportivo UCR 300 este P.O.Box 85810-1000 San Jose Tel. 225-9067, Fax. 253-8028, 224-3961 • Ave. 10-12 calle 1, San Jose P.O.Box 10104-1000 San Jose Tel. 280-9417, Fax. 280-6575 • Calle 25, avenidas 8 y 10, Edificio Vista Palas. P.O.Box 126-2120 San Francisco de Guadalupe Tel. 233-1955, Fax. 221-3027, 233-7095 • Ave. 10-12 calle 1, San Jose P.O.Box 10094-1000 San Jose Tel. 256-8467, Fax. 233-2334 • Costado norte, Emergencias del Hospital Calderon Guardia. P.O.Box 7-3350-1000 San Jose Tel. 222-5616, Fax. 223-1837 • De la Casa Italia, 100 oeste, Barrio Francisco Peralta P.O.Box 1338-1002 Paseo Estudiantes Tel. 234-0973, Fax. 234-0651 • Sabanilla de Montes de Oca, del Campo Deportivo UCR 300 este P.O.Box 5298-1000 San Jose Tel. 225-7548, 225-5845, 253-7555, Fax. 225-8862 • De la Casa Italia, 250 sur en Barrio Gonzalez Lahmann. P.O.Box 10104-1000 San Jose Tel. 283-8004, Fax. 283-7343 • Sabanilla de Montes de Oca, Del Campo Deportivo UCR 300 m. este P.O.Box 11384-1000 San Jose Tel. 253-9942, Fax. 253-9942
c) Ministerio de Educacion Publica	<ul style="list-style-type: none"> • Antigua Embajada Americana P.O.Box 10087-1000 San Jose Tel. 233-9050, Fax. 233-0390 • Detras del Centro Comercial El Pueblo, Frente a Recope en San Francisco de Goicoechea P.O.Box 465-2120 San Jose Tel. 255-3525, Fax. 255-4527
d) Ministerio de Obras Publicas y Transportes (MOPT)	<ul style="list-style-type: none"> • Costado oeste del Liceo de Costa Rica P.O.Box 10176-1000 San Jose Tel. 257-7798, Fax. 255-0042 • 100 m norte del Aeropuerto Tobias Bolanos en Pavas. P.O.Box 5258-1000 San Jose Tel. 220-2020, Fax. 220-2054 • 200 m noroeste y 100 m este del Parque de la Paz. P.O.Box 1138-1011 San Jose Tel. 227-8072, Fax. 286-0939, 227-3617
	<ul style="list-style-type: none"> • Costado oeste del Liceo de Costa Rica P.O.Box 10176-1000 San Jose Tel. 223-4626, Fax. 222-2918 • Costado oeste del Liceo de Costa Rica P.O.Box 10176-1000 San Jose Tel. 257-7798 ext. 2373, Fax. 222-7479

Name of Organization	Contact Address
	<ul style="list-style-type: none"> • Costado oeste del Liceo de Costa Rica P.O.Box 148-1001 San Jose Tel. 223-9266 ext. 619, Fax. 226-8692
c) Ministerio de Planificación Nacional Y Política Económica (MIDEPLAN)	<ul style="list-style-type: none"> • Edificio Alfa, calle 4, avenida 3 y 6. P.O.Box 1127-1000 San Jose Tel. 223-2322, Fax. 221-3282 • Edificio Alfa, calle 4, avenida 3 y 6. P.O.Box 10127-1000 San Jose Tel. 223-4720, 223-2322, ext. 2610, Fax. 221-3091 • Edificio Alfa, 6 Piso, calle 4, avenida 3 y 6 P.O.Box 1127-1000 San Jose Tel. 223-2322 ext. 2608 o 2609, Fax. 258-18-68 • Edificio Alfa, calle 4, avenida 3 y 6. P.O.Box 10127-1000 San Jose Tel. 233-1292, 223-2322 ext. 2517, Fax. 223-7930
f) Ministerio de Salud	<ul style="list-style-type: none"> • Calle 14 y Avenida 16, Edificio Antigua Escuela de Enfermeras, San Jose P.O.Box 10123-1000 San Jose Tel. 233-0683, Fax. 255-2594 Tel. 233-2149, Fax. 233-2149 Tel. 223-0333, Fax. 233-2149
g) Museo Nacional de Costa Rica (MNCR)	<ul style="list-style-type: none"> • Calle 17 Avenida Central y Segunda. P.O.Box 749-1000 San Jose Tel. 257-1433, 221-4429, Fax. 233-7427

Source: a)

6.2 Public Autonomous

Name of Organization	Contact Address
a) Autoridad Reguladora de los Servicios Públicos (ARESEP)	<ul style="list-style-type: none"> • Sabana Sur, de la Contraloría 400 oeste. P.O.Box 936-1000 San Jose Tel. 220-0102, Fax. 220-0374
b) Caja Costarricense de Seguro Social (CCSS)	<ul style="list-style-type: none"> • Calle 5 y 7 Av. 2 San Jose P.O.Box 10105 San Jose Tel. 258-3165, Fax. 233-1850 Tel. 256-7898, Fax. 256-7898
c) Compañía Nacional de Fuerza y Luz (CNFYL)	<ul style="list-style-type: none"> • De Radiográfica en San Jose, 50 sur. P.O.Box 1026-1000 San Jose Tel. 222-1779, 295-5000 ext. 5261, Fax. 221-4601 Tel. 295-5000 ext. 5125, Fax. 257-3770
d) Empresa de Servicios Públicos de Heredia (ESPH)	<ul style="list-style-type: none"> • Calle 10, avenida 14 P.O.Box 26-3000 Heredia Tel. 260-0833 ext. 739, Fax. 237-6566
e) Instituto Costarricense de Acueductos y Alcantarillados (AYA)	<ul style="list-style-type: none"> • Edificio La Llacuna, contiguo al Cine Variedades P.O.Box 5120-1000 San Jose Tel. 257-9222 ext. 206, Fax. 233-7552, 223-6103
f) Instituto Costarricense de Electricidad (ICE)	<ul style="list-style-type: none"> • ICE, Sabana Norte P.O.Box 1032-1000 San Jose Tel. 220-7720, Fax. 231-4737 • ICE, Sabana Norte, Sext. o piso. P.O.Box 1032-1000 San Jose Tel. 220-752, Fax. 220-8206 • ICE, Sabana Norte, 2do piso del bloque A. P.O.Box 1032-1000 San Jose Tel. 220-7309, 220-7531, Fax. 220-8004
	<ul style="list-style-type: none"> • ICE, Sabana Norte, 2do piso del bloque A. P.O.Box 1032-1000 San Jose Tel. 220-7307, Fax. 220-8204 • ICE, Sabana Norte, 2do piso del bloque A. P.O.Box 1032-1000 San Jose Tel. 220-7599, Fax. 220-1555
g) Instituto Costarricense de Pesca y Acuicultura (INCOPECA)	<ul style="list-style-type: none"> • Frente al INA en Puntarenas P.O.Box 333-54 Puntarenas Tel. 220-3952, Fax. 296-2662
h) Instituto Nacional de Vivienda y Urbanismo (INVU)	<ul style="list-style-type: none"> • Barrio Amon, San Jose P.O.Box 22534-1000 San Jose Tel. 256-5265, Fax. 223-4006

Name of Organization	Contact Address
	<ul style="list-style-type: none"> Barrio Amon, San Jose P.O.Box 22534-1000 San Jose Tel. 256-5265 ext. 270, Fax. 223-4006
i) Refinadora Costarricense de Petroleo (RECOPE)	<ul style="list-style-type: none"> Detras del Centro Comercial El Pueblo, en San Francisco de Goicoechea P.O.Box 4351-1000 San Jose Tel. 257-6544 ext. 1024, Fax. 255-2049
j) Servicio Nacional de Aguas Subterranas, Riego y Avenamiento (SENARA)	<ul style="list-style-type: none"> De la Clinica Moreno Canas, 100 este y 25 norte. Barrio Cuba. P.O.Box 5262-1000 San Jose Tel. 257-97-33 ext.12, Fax. 222-87-85
k) Instituto Nacional de Seguros	<ul style="list-style-type: none"> Frente al Parque Espana, en San Jose Centro P.O.Box 1061-1000 San Jose Tel. 223-5800, Fax. 222-2310

Source: a)

6.3 Academic

Name of Organization	Contact Address
a) Centro Agronomico Tropical de Investigacion y Ensenanza (CATIE)	<ul style="list-style-type: none"> CATIE, Turrialba, Cartago P.O.Box 7170-CATIE Turrialba Tel. 556-6431 ext. 200, 556-6081, Fax. 556-6166 Tel. 556-0232, 556-6431 ext. 382, Fax. 556-6480 Tel. 556-8514, 556-6431 ext. 214, Fax. 556-1533 Tel. 556-0401, 556-6431 ext. 318, Fax. 556-2430 Tel. 556-7830, 556-6431 ext. 340, Fax. 556-1576 Tel. 556-1933, 556-6431 ext. 374, Fax. 556-7766
b) Escuela de Agricultura de la Region Tropical Humeda (EARTH)	<ul style="list-style-type: none"> Las Mercedes de Guacimo Limon. P.O.Box 4442-1000 San Jose Tel. 255-2000, Fax. 255-2726
c) Instituto Tecnologico de Costa Rica (ITCR)	<ul style="list-style-type: none"> Instituto Tecnologico de Costa Rica P.O.Box 159-7050 Cartago Tel. 552-5333, Fax. 551-5348 Instituto Tecnologico de Costa Rica Tel. 552-5333 ext. 2279, Fax. 591-4182 Instituto Tecnologico de Costa Rica Tel. 552-5333 ext. 2568, Fax. 591-5147 Instituto Tecnologico de Costa Rica Tel. 552-5333 ext. 2489, 591-3315, Fax. 591-3315 Instituto Tecnologico de Costa Rica Tel. 552-5333 ext. 2423, 2309, 2422 551, 8220 Fax. 551-6563
d) Universidad de Costa Rica (UCR)	<ul style="list-style-type: none"> Ciudad Universitaria Rodrigo Facio. San Pedro de Montes de Oca P.O.Box 2060-1000 UCR-Rectoria Tel. 207-4000, Fax. 207-5225 Ciudad Universitaria Rodrigo Facio. San Pedro de Montes de Oca P.O.Box 2060-1000 UCR Att: CIA Tel. 207-5491, 5490, 5263, Fax. 234-16-27 Ciudad de Investigacion UCR. P.O.Box 2060-1000 UCR Att: CBCYM Tel. 253-5661, Fax. 224-6749 Ciudad de Investigacion UCR. P.O.Box 2060-1000 UCR, Att: CIMAR Tel. 253-5661 ext. 3401, Fax. 253-3480 Ciudad Universitaria Rodrigo Facio. San Pedro de Montes de Oca P.O.Box 2060-1000 UCR Att: CICIMA Tel. 207-4705, Fax. 225-5511 Ciudad Universitaria Rodrigo Facio. San Pedro de Montes de Oca P.O.Box 2060-1000 UCR Att: CICA Tel. 207-4479, Fax. 253-1363 De la Farmacia la Paulina 50 metros oeste, 25 m. norte y una cuadra al oeste. Esc Ing Civil, U.C.R. Att: CIEDES Tel. 283-9705, Fax. 225-1684 Ciudad Universitaria Rodrigo Facio. San Pedro de Montes de Oca P.O.Box 2060-1000 UCR Att: CIPRONA Tel. 207-4474, Fax. 225-9866 Ciudad Universitaria Rodrigo Facio. San Pedro de Montes de Oca P.O.Box 2060-1000 UCR Att: CITA Tel. 207-4701, Fax. 253-3762

Name of Organization	Contact Address
	<ul style="list-style-type: none"> • Ciudad Universitaria Rodrigo Facio. San Pedro de Montes de Oca P.O.Box 2060-1000 UCR Escuela de Geologia Tel. 225-7141, Fax. 234-2347 • Ciudad Universitaria Rodrigo Facio. San Pedro de Montes de Oca P.O.Box 2060-1000 UCR Escuela de Biologia Tel. 207-5392, 4308, Fax. 207-4216 • Ciudad Universitaria Rodrigo Facio. San Pedro de Montes de Oca P.O.Box 2060-1000 UCR Escuela de Quimica Tel. 207-5370, 5371, Fax. 253-5020 • Ciudad de Alajuela, Barrio San Jose P.O.Box 183-4050 Alajuela Tel. 433-8284 433-9111, Fax. 443-9086 • Ciudad Universitaria Rodrigo Facio. San Pedro de Montes de Oca P.O.Box 2060-1000 UCR. Att: Facultad de Agronomia Tel. 207-4204, 4709, Fax. 225-9694 • Paraiso de Cartago, 40 m sur y 100 m este de la Entrada del Campo Ayala P.O.Box 1031-7050 Cartago Tel. 552-3247, Fax. 552-3151 • Ciudad Universitaria Rodrigo Facio. San Pedro de Montes de Oca P.O.Box 3620 San Pedro De Montes de Oca Tel. 207-5354, 5621, Fax. 224-2619 • 2do Piso Edificio Lachner, Altos de la Pops, Frente a la Facultad de Derecho P.O.Box 2060-1000 UCR Att: OdD Tel. 283-7619, 7483, Fax. 283-7563 • De la Farmacia la Paulina 50 metros oeste, 25 m. norte y una cuadra al oeste. P.O.Box Esc Ing.Civil, U.C.R. Att: ProDUS Tel. 224-8838, Fax. 283-7634 • Ciudad Universitaria Rodrigo Facio. San Pedro de Montes de Oca P.O.Box 2060-1000 UCR Att: SIBDI Tel. 253-6152, Fax. 234-2809
e) Universidad Estatal a Distancia (UNED)	<ul style="list-style-type: none"> • De la Farmacia La Paulina en Sabanilla de Montes de Oca, 200 m al este P.O.Box 474-2050 San Pedro Tel. 253-2121 ext. 2505, Fax. 253-4990 • De la Farmacia La Paulina en Sabanilla de Montes de Oca, 200 m al este. P.O.Box 474-2050 San Pedro Tel. 253-2121 ext. 2254, 2244, Fax. 234-6547
	<ul style="list-style-type: none"> • De la Farmacia La Paulina en Sabanilla de Montes de Oca, 200 m al este. P.O.Box 474-2050 San Pedro Tel. 253-2121 ext. 2381, Fax. 224-9216 • De la Farmacia La Paulina en Sabanilla de Montes de Oca, 200 m al este. P.O.Box 474-2050 San Pedro Tel. 253-2121 ext. 2260, 2261, Fax. 234-1631
f) Universidad Nacional (UNA)	<ul style="list-style-type: none"> • UNA, Heredia P.O.Box 86-3000 Heredia, UNA Tel. 261-0101 ext. 401, Fax. 237-7593 Tel. 277-3181, Fax. 237-5144 Tel. 261-0101 ext. 292, Fax. 277-3290 Tel. 277-3324, Fax. 237-6427 Tel. 261-0101 ext. 584, 277-3584, Fax. 277-3583 Tel. 261-0102 ext. 357, Fax. 277-3350 • De la Esquina norte de la UNA, 25 este. P.O.Box 86-3000 Heredia, UNA Tel. 261-0101 ext. 304, 305, 261-0781 Fax. 261-0303 • UNA, Heredia. P.O.Box 86-3000 Heredia, UNA Tel. 261-0101, 237-5134, Fax. 237-6427 Tel. 261-0101 ext. 440, 237-7039 Fax. 237-7036 Tel. 277-3329, Fax. 237-6427 Tel. 261-0102 ext. 349-357, 277-3357 Fax. 277-3350

Source: a)

6.4 No Governmental (National/International)

Name of Organization	Contact Address
a) Asociacion Conservacionista "YISKI".	• De la esquina sureste del club La Guaria, 250 sur, casa crema de alto a mano derecha P.O.Box 1038-2150 Moravia Tel. 236-3823, 297-0970, Fax. 235-8125
b) Asociacion Nacional de Agricultura Organica (ANAO)	• Vargas Araya en Montes de Oca, contiguo al Colegio Monte Rey P.O.Box 132-2020 Zapote Tel. 224-0911, Fax. 224-6911
c) Asociacion Palmarena para la recuperacion del Ambiente (APRA)	• Frente al costado norte del Parque de Palmares, Bufette Campos y Sagot P.O.Box 200-4300 Palmares, Alajuela Tel. 453-0009, Fax. 453-1415
d) Asociacion Ramonense para la Conservacion Ambiental (ARCA)	• Planta Baja del Palacio Municipal de San Ramon P.O.Box 172-4250 San Ramon, Alajuela Tel. 445-5490, Fax. 445-5718
e) Asociacion Ramonense para el Desarrollo de la Agricultura Organica (ARDAO)	• Agencia de ext. ension Agricultura del MAG en San Ramon P.O.Box 245-4250 San Ramon, Alajuela Tel. 445-5490, Fax. 445-5718
f) Biomass Users Network (BUN-CR)	• Lourdes de Montes de Oca, de Supermercado Pali 100 sur, contiguo al parqueo. P.O.Box 573-2050 Montes de Oca Tel. 283-8835, Fax. 283-8845
g) Centro Cientifico Tropical (CCT)	• Del Antiguo Higueron en San Pedro 100 sur y 125 este P.O.Box 83-870-1000 San Jose Tel. 225-2649, Fax. 253-4963
h) Centro de Derecho Ambiental y de los Recursos Naturales (CEDARENA)	• Del Higueron en San Pedro, 100 suroeste y 450 al este P.O.Box 134-2050 San Pedro Tel. 253-7239, 224-8239, Fax. 225-5111
i) Centro de Gestion Tecnologica e Informatica Industrial(CEGESTI)	• Del costado noroeste de la Iglesia Santa Teresita 450 este P.O.Box 1082-2050 San Pedro Tel. 280-8511, Fax. 280-2494
j) Centro de Investigacion en Cafe (CICAFE)	• San Pedro de Barba de Heredia P.O.Box 37-1000 San Jose Tel. 260-1875, Fax. 237-1975
k) Cruz Roja Costarricense (CRC)	• Avenida 8, calle 14, frente a funeraria Polini P.O.Box 1025-1000 San Jose Tel. 233-70-33 ext. 208, Fax. 221-3243
l) Direccion de Investigacion y ext. ension de la Cana de Azucar (DIECA)	• Barrio Tourmon, del Complejo Kamakiri 200 este P.O.Box 2330-1000 San Jose Tel. 221-0252, Fax. 223-0839
m) Federacion Costarricense para la Conservacion del Ambiente (FECON)	• Barrio Los Yoses, Altos de Soda Spoon, 3 Piso San Pedro P.O.Box 1948-1002 Paseo de los Estudiantes Tel. 283-6046, 283-6128, Fax. 283-6046
n) Fundacion Ambio (AMBIO)	• De Casa Matute Gomez, 100 este y 50 sur. Casa 1053 P.O.Box 1487-1002 Paseo de Estudiantes Tel. 258-1212, Fax. 222-3182
o) Fundacion Neotropica (FN)	• Frente al Colegio de Ingenieros y Arquitectos en Curridabat. P.O.Box 236-1002 San Jose Tel. 253-2130 ext. 211 o 215, Fax. 253-4210
p) Fundacion Parques Nacionales (FPN)	• De la Iglesia Santa Teresita, 300 norte y 150 este. P.O.Box 1108-1002 Paseo de los Estudiantes Tel. 257-2239, Fax. 222-4732
q) Instituto Interamericano de Cooperacion para la Agricultura (IICA)	• Carretera de Guadalupe hacia Coronado, contiguo a la Clinica del Seguro Social P.O.Box 55-2200 Coronado Tel. 229-0222, Fax. 229-1741
r) Instituto Nacional de Biodiversidad (INBio)	• 200 norte y 400 oeste del Cementerio de Santo Domingo de Heredia. P.O.Box 22-3100 Santo Domingo Heredia Tel. 244-0690, Fax. 244-4654
s) Junta Administrativa de Servicios Electricos de Cartago (JASEC)	• Avenida 1, calles 3 y 5, Costado sur del Banco Credito Agricola de Cartago P.O.Box 179-7050 Cartago Tel. 551-2828 ext. 213, Fax. 551-4529
t) Oficina Regional para Centroamerica de la Union Mundial para la Naturaleza (UICN)	• De la Iglesia de Moravia, 200 sur casa esquinera blanca con verde P.O.Box 0146-2150 Moravia Tel. 236-2733 ext. 37, Fax. 240-9934
u) Organizacion para Estudios Tropicales (OET)	• 650 oeste del Colegio Lincon en Moravia P.O.Box 676-2050 San Pedro Tel. 240-66-96 766-6565, Fax. 766-65-35

Source: a)

6.5 State of the Environment

Expert / Experto	Center, Program / Centro, Programa, Escuela, Institution / Institucion	Phone / FAX - Telefono/Fax, E-mail / correo electronico
1- Atmospheric Pollution / Contaminacion del Aire		
Lluvia Acida-Contaminacion Costera/Marina	CIMAR, UCR	Tel: 253-5661 ext. 3401 Fax: 253-5661 ext. 3480 E-mail: jacuna@cariari.ucr.ac.cr
Contaminacion Aire	Escuela de Ciencias Ambientales, Programa Contaminantes, UNA Facultad de Tierra y Mar.	Tel: 261-0101 ext 292, 277-3292 / , Fax: 237-7032 E-mail: malfarog@una.ac.cr
Calidad de Aire	CICA, UCR	Tel: 253-1363/225-0064 Fax: 253-1363/234-6164 E-mail: abaniche@cariari.ucr.ac.cr
Programa Ozono	Laboratorio de Investigaciones Atmosfericas y Planetarias y en el Laboratorio Fisica Nuclear., UCR Facultad de Ciencias, Escuela de Fisica.	Tel: 224-2619, Fax: 223-9359
Contaminacion atmosferica y sonica	Proceso de Normalizacion de la Unidad Tecnica Especializada de la Dir. de Proteccion al Amb. Humano, Ministerio Salud	Tel: 255-3711, Fax: 257-6028 E-mail: aincer@ns.netsalud.sa.cr
Contaminacion Aire	Escuela de Quimica, UNA Facultad de Ciencias Exactas y Naturales.	Tel: 277-3576, Fax: 277-3349
Contaminacion Aire	CICA, UCR	Tel: 253-1363/225-0064, Fax: 253-1363/234-6164 E-mail: malvarez@cariari.ucr.ac.cr
Contaminacion atmosferica y sonica	Proceso de Control Estatal de la Direccion de Proteccion al Ambiente Humano, Ministerio Salud	Tel: 233-1081, Fax: 222-9625
2- Water Pollution / Contaminacion del Agua		
Microbiologia	Lab. de Microbiologia, UCR	Tel: 385-5497/207-4361, Fax: 225-2374 E-mail: mlarias@cariari.ucr.ac.cr
Soil Pollution, Plaguicidas	Centro de Investigaciones para Contaminacion Ambiental, UCR Facultad de Agronomia, Escuela de Fitotecnica.	Tel: 253-1363/225-0064 Fax: 253-1363/234-6164
Contaminacion agua	Instituto Regional de Estudios en Sustancias Toxicas. (IRET), UNA	Tel: 277-3584, Fax: 277-3583 261-0101 ext 584 E-mail: iret@una.ac.cr
Quimico	Centro Cientifico Tropical, CCT	Tel: 253 3267, Fax: 253-4963 E-mail: ccarazo@cariari.ucr.ac.cr
Menejo de Aguas Residuales y Contaminacion del Agua	Proceso de Control Estatal de la Dir. de Proteccion al Amb. Humano, Ministerio Salud	Tel: 233-1081, Fax: 222-9625
Calidad de Aguas	CICA	Tel: 253-1363 Fax: 253-1363/234-6164
Contaminacion agua	Servicio Nacional de Aguas Subterraneas SENARA	Tel: 257-9733
Contaminacion agua	CICA, UCR	Tel: 261/0101 ext 292, 277-3292 Fax: 237-7032 E-mail: rsolorzano@ns.minae.go.cr
Agua	CIMAR, UCR Facultad de Ciencias,	Tel: 2535661 ext 3401, Fax: ext 3480 E-mail: javargas@cariari.ucr.ac.cr
3- Other Pollution / Otros tipos de Contaminacion		
Contaminacion Sonica	CICIMA, Escuela de Fisica., UCR Facultad de Ciencias,	Tel: 225-5511, Fax: 225-5511 E-mail: jaraya@cariari.ucr.ac.cr
Contaminacion Sonica Plaguicidas en el cultivo de cafe.	Instituto Geografico Nacional (IGN), MOPT CICAFFE (Centro de Investigacion del Cafe)	Tel: 257-7798 ext. 2627 Tel: 260-1875 E-mail: icafe@sol.racsa.co.cr
Plaguicidas en el cultivo de la cana.	DIECA (Direccion de Investigacion y Extension de la Cana de Azucar)	Tel: 221-0252, Fax: 223-0839
Plaguicidas	Escuela de Biologia, UCR Facultad de Ciencias	Tel: 207-4215, Fax: 225-6454
Control Biologico de Plagas	Escuela de Biologia., UCR Facultad de Ciencias.	Tel: 207-4234/207-5318 Fax: 224-9367 E-mail: aincer@ns.netsalud.sa.cr

Expert / Experto	Center, Program / Centro, Programa, Escuela, Institution / Institucion	Phone / FAX - Telefono/Fax, E-mail / correo electronico
Contaminacion Sonica	Proceso de Normalizacion de la Unidad Tecnica Especializada de la Dir. de Proteccion al Amb. Humano, Ministerio Salud	Tel: 255-3711, Fax: 257-6028
Plaguicidas en el cultivo de frutales	Estacion Fabio Baudrit, UCR	Tel: 433-9111/433-8430 Fax: 4339086 E-mail: jlobo@cariari.ucr.ac.cr
Plaguicidas	CICA, UCR	Tel: 261/0101 ext 292 Fax: 277-3292 / 237-7032
Fertilizantes y Plaguicidas en el cultivo de verduras	Estacion Fabio Baudrit, UCR	Tel: 433-9111/433-8430 Fax: 4339086 E-mail: mmoreira@cariari.ucr.ac.cr
Detergentes	Unidad de Servicio a la Industria UCR, Escuela de Quimica.	Tel: 207-5370, Fax: 207-5020
Sustancias Radiactivas	CICA, UCR	Tel: 261/0101 ext 292 Fax: 277-3292 / 237-7032 E-mail: asalzar@cariari.ucr.ac.cr
Plaguicidas	CICA, UCR	Tel: 261/0101 ext 292 Fax: 277-3292 / 237-7032 E-mail: msegnini@cariari.ucr.ac.cr
4- Waste Management / Manejo de Desechos		
Desechos Solidos	Escuela de Ciencias Geograficas., UCR	Tel: 277-3283, Fax: 237-2857 E-mail: oarrieta@irazu.una.ac.cr
Desechos Solidos Analisis Quimicos	Escuela de Quimica, UCR. Escuela de Quimica, Caja Costarricense del Seguro Social	Tel: 207-5038 Tel: 222-0898, Fax: 253-5020
Desechos solidos y peligrosos	Unidad Tecnica Especializada de la Direccion de Proteccion al Ambiente Humano, Ministerio Salud	Tel: 255-3711, Fax: 257-6028
Desechos agricolas, conservacion suelos	Escuela de Ciencias Agrarias, UNA. Facultad Tierra y Mar	Tel: 277-3303
Manejo de Desechos	Escuela de Ingenieria Civil, ProDUS, UCR Facultad de Ingenieria,	Tel: 224-8838/283-7634 E-mail: rpujol@cariari.ucr.ac.cr
5- Energy Conservation and Alternativy Energy / Conservacion de Energia y Energia Alterna		
Conservacion de la Energy	Programa de Conservacion de Energia, CNFYL	Tel: 295-5000 ext 5393 E-mail: henrychi@sol.racsa.co.cr
Energia	CNFYL ARESEP	Tel: 255-3711, Fax: 257-6028 Tel: 220-0102, Fax: 220-0374 E-mail: dmora@sol.racsa.co.cr
Hidrograficas	ACOPE, Asociacion Costarricense de Productores de Energia	Tel: 228-8003 E-mail: spaniagu@cariari.ucr.ac.cr
Energia Generacion de Energia	ITCR, Instituto Tecnologico Programa de Generacion de Energia, CNFYL	Tel: 552-5333 Tel: 295-5000
Energia Eolica Energia Solar	Departamento de Energia Alterna, ICE Programa Energia Solar, UNA	Tel: 261-0101, Fax: 277-3344 E-mail: camind@sol.racsa.co.cr
Energia Eolica Energia Geotermica	Proyecto Eolico Tejona, ICE Departamento de Sismologia, vulcanologia y exploracion Geofisica, UCR	Tel: 220-7275, Fax: 220-8234 Tel: 225-7941/234-2347
Fuentes alterna energia y eficiencia energetica Generacion de Energia	Area de Energia, Camara de Industrias Programa de Generacion de Energia, CNFYL	Tel: 256-2826
Energia	Direccion Sectorial de Energia, MINAE	Tel: 221-3027/233-7095 E-mail: jaoroz@mmail.ice.go.cr
6- Water Supply / Abastecimiento de Agua		
Aguas Subterraneas y Acueductos Rurales	Division de Aguas Subterraneas de la Direccion de Obras Rurales, AyA	Tel: 257-922 ext268
Agua Potable y aguas residuales	Estudios Basicos de la Direccion de Diseno y Supervision de Obras Urbanas, AyA	Tel: 257-9222 ext 275
Acueductos Rurales	Division de Informacion, Control y Evaluacion de la Direccion de Obras Rurales, AyA	Tel: 257-9222 ext 263-264
Calidad del agua Perdidas en Acueductos Manejo de Cuencas	Laboratorio Central, AyA Programa de Control de Perdidas, AyA Estudios Basicos de la Direccion de Diseno y Supervision de Obras Urbanas, AyA	Tel: 279-5118, Fax: 279-5173 Tel: 255-3963, Fax: 255-3394 Tel: 257-922 ext 331
Operacion de Acueductos	Centro de Operaciones del Acueducto Metropolitano, AyA	Tel: 257-1497, Fax: 223-5935

Expert / Experto	Center, Program / Centro, Programa, Escuela, Institution / Institucion	Phone / FAX - Telefono/Fax, E-mail / correo electronico
Hidrogeologia, acuíferos del Valle Central Contaminación agua Acueductos Urbanos	Estudios Basicos de la Direccion de Diseno y Supervision de Obras Urbanas, AyA Servicio Nacional de Aguas Subterranas, SENARA Direccion de Diseno y Supervision de Obras, AyA	Tel: 257-9222 ext. 282 Tel: 257-9733 no tiene Tel: 257-9222 ext 282
7- Waste Water Management / Manejo de Aguas Servidas		
Tratamiento de Aguas Servidas y Contaminación del Agua Manejo de Aguas Residuales Tratamiento de Aguas Servidas Manejo de Aguas Residuales Tratamiento de Aguas Servidas y Contaminación del Agua Tratamiento de Aguas Servidas y Contaminación del Agua	Proceso de Permisos de Construcción de la Direccion de Protección al Ambiente Humano, Ministerio Salud Direccion de Aguas Residuales, AyA Laboratorio Ingeniería Ambiental, UCR Facultad de Ingeniería Direccion de Aguas Residuales, AyA Proceso de Normalización de la Unidad Técnica Especializada de la Direccion de Protección al Ambiente Humano, Ministerio Salud Dir. de Protección al Amb. Humano, Ministerio Salud	Tel: 233-0903, Fax: 223-6689 Tel: 257-9222 ext 234-235 Tel: 207-5063, Fax: 253-4942 E-mail: alorena@terrafling.ucr.ac.cr Tel: 223-5555 ext 218 Tel: 255-3711, Fax: 257-6028 E-mail: aincer@ns.netsalud.sa.cr Telefax: 233-2149
Tratamiento de Aguas Servidas y Contaminación del Agua	Unidad de Permisos y Controles de la Direccion de Protección al Ambiente Humano, Ministerio Salud	Telefax: 223-66-89
8- Forest Conservation / Conservación de Bosques		
Forestal Fertilidad de Suelo Fertilidad de Suelo Fertilidad de Suelo Ecología Forestal Forestal Forestal Forestal	Centro de Investigación en Integración Bosque Industria (CIBI), ITCR Centro de Investigaciones Agronómicas, Escuela de Fitotecnia., UCR Facultad de Agronomía, Centro de Investigaciones Agronómicas, Escuela de Fitotecnia., UCR Facultad de Agronomía Centro Científico Tropical, CCT UNA. Facultad de Tierra y Mar Centro de Investigación y Protección Ambiental, ITCR Área Humedales, UICN Departamento de Ingeniería Forestal, ITCR	Tel: 552-5333 ext 2489/591-3315 E-mail: fbertsch@cariari.ucr.ac.cr Tel: 224-3712, Fax: 234-1627 Tel: 224-3712, Fax: 234-1627 Tel: 225-4963 Tel: 277-3293/277-3291 Fax: 260-0303 Tel: 552-5333 ext 2568 Tel: 236-2733, Fax: 240-9934 Tel: 552-5333 ext 2279
9- Biological Diversity / Biodiversidad		
Biología Marina- Arrecifes de Coral Biodiversidad Pesca Orquídeas Biodiversidad Vida Silvestre Agua Dulce, humedales	CIMAR, UCR Escuela de Biología. Instituto Nacional de Biodiversidad, INBIO INCOPESCA, Instituto Costarricense de Pesca y Acuicultura Jardín Lankester, UCR Escuela de Biología., UCR Facultad de Ciencias, Oficina Regional para Centroam., UICN Escuela de Biología., UCR Facultad de Ciencias,	Tel: 253-5661 ext 3401 Fax: 253-5661 ext 3480 Tel: 244-0690 Tel: 220-3952 Tel: 552-3247 Tel: 207-4043, Fax: 224-6793 E-mail: ojochoa@cariari.ucr.ac.cr Tel: 236-2733, Fax: 240-9934 E-mail: vsolis@uicn.icr.co.cr Tel: 224-3710, Fax: 224-9367 E-mail: gumana@cariari.ucr.ac.cr
10- Natural Resource Management / Manejo de Recursos Naturales		
Suelos Recursos Naturales Oceanografía Recursos Naturales Oceanógrafo Hidrología	Centro de Investigaciones Agronómicas, Escuela de Fitotecnia., UCR Facultad de Agronomía Centro Científico Tropical CCT Centro Operativo del Instituto Internacional del Océano., UNA Facultad de Ciencias Exactas y Naturales. Observatorio del Desarrollo, UCR Facultad de Ciencias Económicas. Centro de Investigaciones Geofísicas, UCR Escuela de Geología Maestría Regional en Manejo de Recursos Hídricos, UCR Facultad de Ciencias	Tel: 224-3712, Fax: 234-1627 Tel: 253 3267, Fax: 253-4963 E-mail: jcalvo@cct.or.cr Tel: 277-3347, Fax: 260-1197 E-mail: gechever@irazu.una.ac.cr Tel: 283-7619, 283-7483 E-mail: egutierr@cariari.ucr.ac.cr Tel: 207-53201, Fax: 207-5096 Tel: 225-7941, Fax: 234-2347/236-0326 E-mail: mlosilla@cariari.ucr.ac.cr

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Bioquímica de procesos post-cosecha. Recursos Naturales Agua Oceanografía Recursos Naturales	Escuela de Química UCR Facultad de Ciencias, . Departamento Administracion de Prestamos y Proyectos, ICE CIMAR, UCR Facultad de Ciencias, Escuela de Biología. Instituto de Investigaciones en Ingeniería, UCR Facultad de Ciencias CIEDES, UCR Escuela de Ingeniería Civil	Tel: 207-5048, Fax: 253-5020 Tel: 220-7275, Fax: 220-1409 Tel: 253-5661 ext 3401, Fax: 253-5661 ext 3480 E-mail: hmolina@cariari.ucr.ac.cr Tel: 224-2619, Fax: 223-9359 Imurillo@cariari.ucr.ac.cr Tel: 283-9705, Fax: 253-4942 E-mail: cquesada@cariari.ucr.ac.cr
Cuencas Hidrograficas Manejo Suelos Agronomo Humedales	Escuela de Fitotecnía, Sede Regional del Atlantico., UCR Facultad de Agronomía, Escuela de Fitotecnía, UCR Facultad de Agronomía, Despacho Viceministro, MINAE Area de Humedales, UICN	Tel: 556-1044, Fax: 234-6164/556-0318 E-mail: wrodrig@cariari.ucr.ac.cr Tel: 224-3712, Fax: 234-1627 E-mail: fsancho@cariari.ucr.ac.cr Tel: 233-4533, Fax: 257-0697 Tel: 236-2733, Fax: 240-9934
11- Natural Disasters / Desastres Naturales		
Climatología-Desastres Meteorologo-Pronostico. Desastres Naturales Meteorología Sismología Ingeniería Estructural Impactos Sociales Oceanografo Vulcanología Deslizamientos Riesgos Naturales Ingeniería Estructural Ciencias de la Tierra y Geofísica. Ingeniería Sísmica	Escuela de Física, UCR Facultad de Ciencias, . MINAE, Departamento Información y Comercialización, IMN Escuela de Física, UCR Facultad de Ciencias, OVSICORI, UNA LANAME, UCR Facultad Latinoamericana de Ciencias Sociales, FLACSO Centro de Investigaciones Geofísicas, UCR OVSICORI, UNA ICE Escuela de Geología, UCR Facultad de Ciencias Laboratorio Nacional de Materiales y Modelos Estructu., UCR, LANAME OVSICORI, UNA Laboratorio Nacional de Materiales y Modelos Estructu., UCR, LANAME	Tel: 207-5394/207-5142, Fax: 224-9367 E-mail: vcastro@cariari.ucr.ac.cr Tel: 222-5616, Fax: 223-1837 Tel: 207-5394, Fax: 234-2703/224-9367 E-mail: wfer@atmos.efis.ucr.ac.cr wfernand@cariari.ucr.ac.cr Tel: 261-0781, Fax: 261-0303 E-mail: jprotti@una.ac.cr Tel: 207-4677/207-4678 Fax: 253-4911 Tel: 253-9621/234-6646 Tel: 207-5320, Fax: 207-5096 Tel: 261-0781, Fax: 261-0303 E-mail: jprotti@una.ac.cr Tel: 220-5320 Tel: 225-7941/253-8407, Fax: 234-2347/253-2586 E-mail: spaniagu@cariari.ucr.ac.cr Tel: 207-4677/207-4678 Fax: 253-4911 Tel: 261-0781, Fax: 261-0303 E-mail: jprotti@una.ac.cr Tel: 207-4677/207-4678 Fax: 253-4911
12- Environmental Education / Educación Ambiental		
Educación de Manejo de Recursos Naturales Educación Ambiental Educación Ambiental Educación Ambiental Educación Ambiental Estudios de Impacto Ambiental Educación Ambiental Educación Ambiental Educación Ambiental Comisión Ambiental	Manejo de Recursos Naturales, UNED UCR Programa Educación Ambiental, UCR, Facultad de Educación Limnología, UNA Programa Educación Ambiental, UNA, Escuela de Ciencias Biológicas Departamento de Educación Ambiental, Ministerio de Educación Escuela de Geología, UCR Facultad de Ciencias PRINSOPAZ, UCR, Facultad de Educación Departamento de Biología, ITCR Programa Educación Ambiental, UNED CONARE	Tel: 253-2121, Fax: 2249216 Tel: 277-3536 telfax E-mail: acharpem@una.ac.cr Tel: 261-0101/277-3322 Fax: 2376427 E-mail: rmendez@una.ac.cr Tel: 221-0731, Fax: 255-4527 E-mail: jmolina@solracs.co.cr Tel: 225-7441, Fax: 223-1609 E-mail: amongeu@cariari.ucr.ac.cr Tel: 224-3066 Tel: 552-5333 ext 2285/ 551-5348 E-mail: imoreira@mimas.ciciter.ac.cr Tel: 253-2121 ext 2254-2244 Tel: 224-5035/224-3066
13- Environmental NGO's / Organizaciones Ambientales No Gubernamentales		

Expert / Experto	Center, Program / Centro, Programa, Escuela, Institution / Institucion	Phone / FAX - Telefono/Fax, E-mail / correo electronico
	Asociacion Conservacionista "YISKI". Asociacion Nacional de Agricultura Organica (ANAO)	P.O.Box 1038-2150, Moravia Tel: 236-3823/297-0970 Fax: 235-8425 P.O.Box 132-2020, Zapote Tel: 224-0911, Fax: 224-0911
	Asociacion Palmarena para la recuperacion del Ambiente (APRA) Asociacion Ramonense para la Conservacion Ambiental (ARCA) Asociacion Ramonense para el Desarrollo de la Agricultura Organica (ARDAO) Biomass Users Network (BUN-CR) Centro Cientifico Tropical (CCT) Centro de Derecho Ambiental y de los Recursos Naturales (CEDARENA) Centro de Gestion Tecnologica e Informatica Industrial (CEGESTI) Centro de Investigacion en Cafe (CICAFE) Cruz Roja Costarricense (CRC) Direccion de Investigacion y Extension de la Cana de Azucar (DIECA) Federacion Costarricense para la Conservacion del Ambiente (FECON) Fundacion Ambio (AMBIO) Fundacion Neotropica (FN) Fundacion Parques Nacionales (FPN) Instituto Interamericano de Cooperacion para la Agricultura (IICA) Instituto Nacional de Biodiversidad (INBio) Junta Administrativa de Servicios Electricos de Cartago (JASEC) Oficina Regional para Centroamerica de la Union Mundial para la Naturaleza (UICN) Organizacion para Estudios Tropicales (OET)	P.O.Box 200-4300, Palmarena, Alajuela Tel: 453-0009, Fax: 453-1415 P.O.Box 172-4250, San Ramon, Alajuela Tel: 445-5490, Fax: 445-5718 P.O.Box 245-4250, San Ramon, Alajuela Tel: 445-5490, Fax: 445-5718 P.O.Box 573-2050, Montes de Oca Tel: 283-8835, Fax: 283-8845 P.O.Box 83-870-1000, San Jose Tel: 225-2649, Fax: 253-4963 P.O.Box 134-2050, San Pedro Tel: 253-7239/224-8239, Fax: 225-5111 P.O.Box 1082-2050, San Pedro Tel: 280-8511, Fax: 280-2494 P.O.Box 37-1000, San Jose Tel: 260-1875, Fax: 237-1975 P.O.Box 1025-1000, San Jose Tel: 233-70-33 ext 208 Fax: 221-3243 P.O.Box 2330-1000, San Jose Tel: 221-0252, Fax: 223-0839 P.O.Box 1948-1002, Paseo de los Estudiantes Tel: 283-6046/283-6128 Fax: 283-6046 P.O.Box 1487-1002, Paseo de Estudiantes Tel: 258-1212, Fax: 222-3182 P.O.Box 236-1002, San Jose Tel: 253-2130 ext 211 o 215 Fax: 253-42-10 P.O.Box 1108-1002, Paseo de los Estudiantes Tel: 257-2239, Fax: 222-4732 P.O.Box 55-2200, Coronado Tel: 229-0222, Fax: 229-4741 P.O.Box 22-3100, Santo Domingo Heredia Tel: 244-0690, Fax: 244-4654 P.O.Box 179-7050, Cartago Tel: 551-2828 ext 213 Fax: 551-4529 P.O.Box 0146-2150, Moravia Tel: 236-2733 ext 37 Fax: 240-9934 P.O.Box 676-2050, San Pedro Tel: 240-66-96/766-6565 Fax: 766-65-35
Others / Otros : -Environmental Economics / Economia Ambiental		
Economia Ambiental	UCR, Instituto de Investigacion en Ciencias Economicas.	Tel: 207-5613, Fax: 280-5835/224-3682 E-mail: madamson@cariari.ucr.ac.cr
Economia Ambiental	UNA Facultad de Ciencias Sociales, Maestría en Política Económica.	Tel: 260-1600, Fax: 237-6868
Economia Ambiental, Economia Ecologica	UNA Facultad de Ciencias Sociales, Maestría en Política Económica	Tel: 260-1600, Fax: 237-6868
Environmental Legislation / Legislacion Ambiental		
Derecho Ambiental	CEDARENA	Tel: 253-7239, Fax: 225-511
Derecho Ambiental	UCR, Facultad de Derecho.	Tel: 207-5668
Derecho Ambiental	Fundacion AMBIO	Tel: 258-1212 E-mail: funambio@sol.racs.co.cr
Ley de Patentes y Biodiversidad	UCR, Vicerrectoria de Investigacion	Tel: 207-5006

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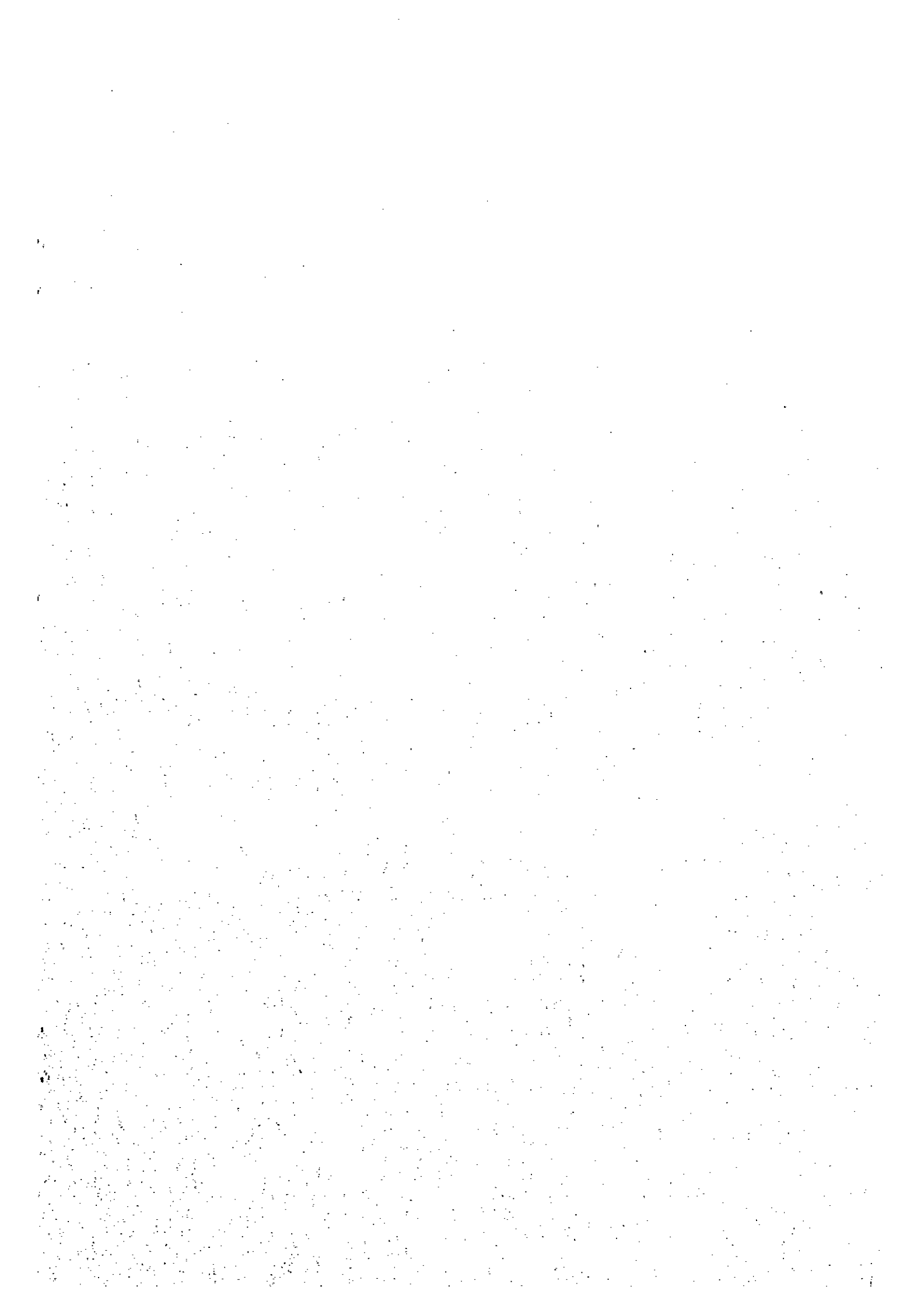
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