

COLOMBIA
ENVIRONMENTAL PROGRAM
(CO-0041)

CONTENTS

Page

MAP
SOCIOECONOMIC DATA
EXECUTIVE SUMMARY

I. FRAME OF REFERENCE	1
A. Environmental situation in Colombia	1
B. Colombia's environmental policy and strategy	2
1. Environmental policy	2
2. Plan de Acción Forestal Tropical para Colombia [Tropical Forestry Action Plan for Colombia] (TFAPC) .	4
C. Institutional framework	5
1. Present situation	5
2. Plans for institutional development in the environmental area	6
D. Participation by the Bank and other international agencies	7
E. Design of the program	8
II. THE PROGRAM	10
A. Program objectives	10
B. Description of subprograms	10
1. Subprogram A: Renewable natural resource management .	10
2. Subprogram B: Institutional strengthening	13
3. Subprogram C: Environmental investments	16
C. Cost and financing	17
1. Cost of the program	17
2. Financing	19
III. EXECUTION	20
A. Execution arrangements	20
B. Structure and coordination functions	20
1. Coordinating unit (CU)	20
2. Operating Regulations	24
C. Operational execution	25
1. Subprogram A: Renewable natural resource management .	25
2. Subprogram B: Institutional strengthening	27
3. Subprogram C: Environmental investments	28
D. Management of the program resources	29
E. Execution period and disbursement period	29

F.	Procurement of goods and services	30
G.	Recognition of prior expenditures and advance of funds . .	31
H.	Control, monitoring and evaluation	31
I.	Maintenance of the works and equipment; management of plantations	32
J.	Status of program preparation	33
	1. Subprogram A: Renewable natural resource management .	33
	2. Subprogram B: Institutional strengthening	33
	3. Subprogram C: Environmental investments	34
K.	Cofinancing mechanisms, use of incentives and cost recovery	34
	1. Natural resource management subprogram projects . . .	34
	2. Environmental investments subprogram projects	35
IV.	THE BORROWER AND THE PARTICIPATING AGENCIES	36
	A. The borrower	36
	B. Temporary coordinating agency: DNP	36
	C. Ministry of the Environment as coordinating agency . . .	36
	D. Executing agencies	37
	1. Regional corporations	37
	2. Other participating agencies	39
V.	FEASIBILITY OF THE PROGRAM	41
	A. Technical feasibility	41
	1. Subprogram A: Renewable natural resource management .	41
	2. Subprogram B: Institutional strengthening	42
	3. Subprogram C. Environmental investments	42
	B. Environmental impact of the program	43
	1. Studies completed	43
	2. Environmental impacts: mitigation and monitoring . .	43
	C. Institutional feasibility	44
	D. Financial feasibility	45
	E. Economic appraisal	45
	1. Renewable natural resource management subprogram . .	46
	2. Environmental investments subprogram	50
	3. Distributional analysis	51
	F. Social impact: community participation and involvement of women	52
	1. Social viability	52
	2. Participation of women	53
	G. Natural disasters	54
	H. Program risks	55
	1. Technical and environmental considerations	55
	2. Institutional considerations	55
	3. Recovery of investment outlays	56
	4. Risks of social conflict	57
	I. Recommendation	57

LIST OF ANNEXES

Annex II-1	Subprogram B. Institutional strengthening. Consultancies and training
Annex II-2	Pipeline of microwatershed projects identified under the program
Annex II-3	Program administration personnel
Annex II-4	Sample of projects for Subprogram C
Annex III-1	Operating Regulations for Subprograms A and B
Annex III-2	Environmental investments subprogram. Operating Regulations
Annex IV-1	Establishment of the Ministry of the Environment (Bill)
Annex V-1	Environmental impact of the program
Annex V-2	Economic analysis of Subprogram A

LIST OF APPENDICES

Appendix I	Proposed resolution (OC)
Appendix II	Proposed resolution (FSO)
Appendix III	Recommendations
Appendix IV	The program (Annex A to the loan contracts)

ABBREVIATIONS

CARDER	Corporación Autónoma Regional de Risaralda (Risaralda Autonomous Regional Corporation)
CDMB	Corporación de Defensa de la Meseta de Bucaramanga (Corporation for Protection of the Bucaramanga Meseta)
CIF	Certificado de Incentivo Forestal (Forestry Incentive Certificate)
CONPES	Consejo Nacional de Política Económica y Social (National Economic and Social Policy Council)
CORPAMAG	Corporación Autónoma Regional del Magdalena y de la Sierra Nevada de Santa Marta (Magdalena and Sierra Nevada de Santa Marta Autonomous Regional Corporation)
CORPES	Consejo Regional de Planificación (Regional Planning Council)
CORPOCALDAS	Corporación Autónoma Regional de Desarrollo de Caldas (Autonomous Regional Corporation for the Development of Caldas)
CORPONOR	Corporación Autónoma Regional de la Frontera Nororiental (Northeastern Frontier Autonomous Regional Corporation)
CORTOLIMA	Corporación Autónoma Regional de Tolima (Tolima Autonomous Regional Corporation)
CRC	Corporación de la Reconstrucción y el Desarrollo del Departamento del Cauca (Cauca Department Reconstruction and Development Corporation)
CRQ	Corporación Autónoma Regional del Quindío (Quindío Autonomous Regional Corporation)
CU	Coordinating unit
CVC	Corporación Autónoma Regional del Cauca (Cauca Autonomous Regional Corporation)
CVS	Corporación Autónoma Regional de los Valles del Sinú y San Jorge (Sinú and San Jorge Valleys Autonomous Regional Corporation)
DEPAC	Special Environmental Policy and Corporations Division (DNP)
DNP	National Planning Department
ECOFONDO	Fondo Ecológico (Ecological Fund)
FAO	Food and Agriculture Organization
FONADE	Fondo Financiero de Proyectos de Desarrollo (Financial Fund for Development Projects)
FSO	Fund for Special Operations
GDP	Gross domestic product

HIMAT	Instituto Colombiano de Hidrología, Metereología y Adecuación de Tierras (Colombian Institute for Hydrology, Meteorology and Land Improvement)
IBRD	International Bank for Reconstruction and Development (World Bank)
ICFES	Instituto Colombiano para el Fomento de la Educación Superior (Colombian Institute for the Promotion of Higher Education)
INDERENA	Instituto Nacional de los Recursos Naturales Renovables (National Renewable Resources Institute)
INPA	Instituto Nacional de Pesca y Acuicultura (National Fishery and Aquaculture Institute)
IRR	Internal rate of return
NGO	Nongovernmental organization
OC	Ordinary capital
PMP	Programming mission paper
TFAP	Tropical Forestry Action Plan
TFAPC	Tropical Forestry Action Plan for Colombia
SENA	Servicio Nacional de Aprendizaje (National Apprenticeship Service)
SINA, SNA	National Environmental System
UDA	Agricultural Development Unit (DNP)
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
USAID	United States Agency for International Development

COLOMBIA

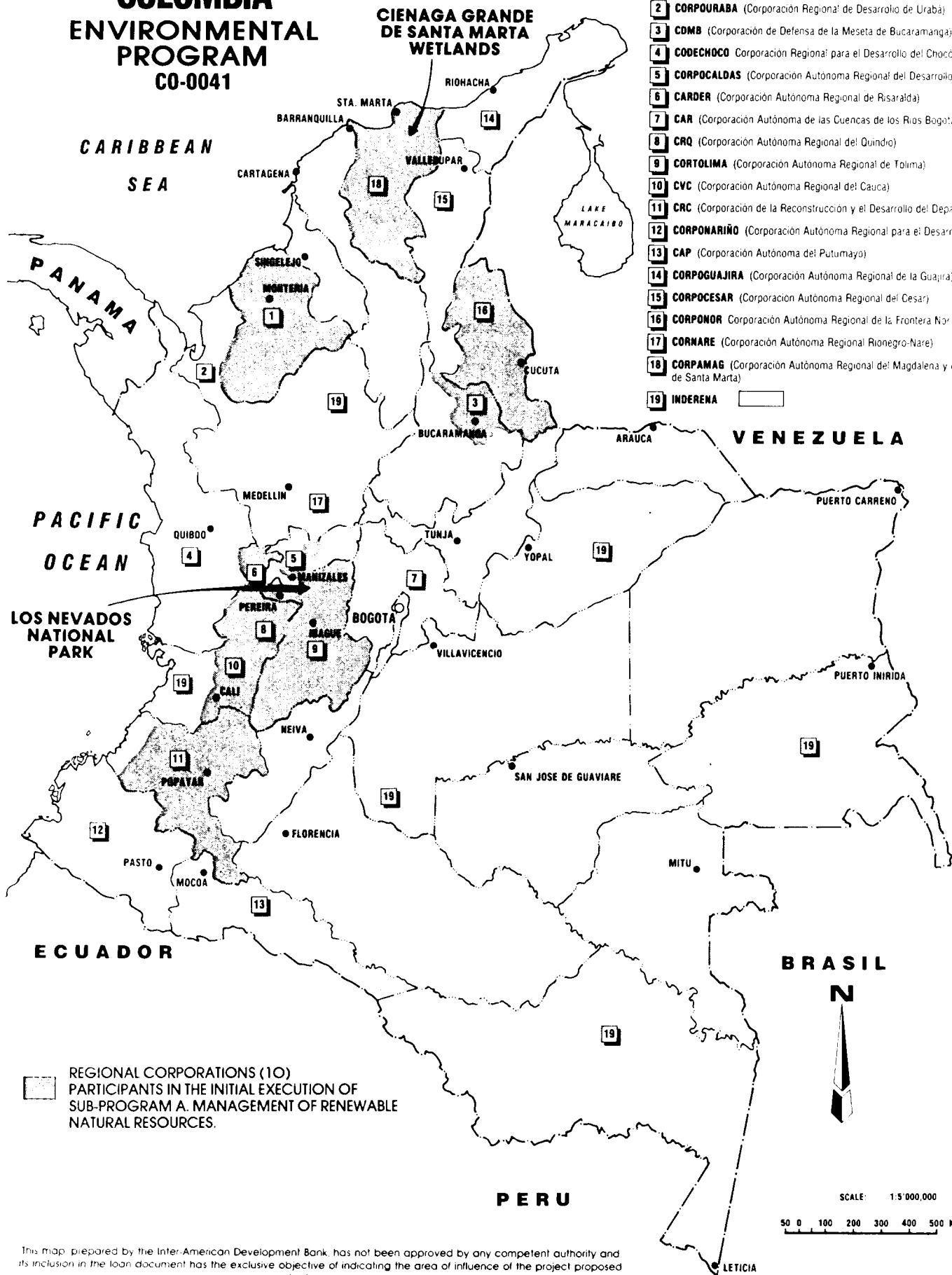
ENVIRONMENTAL PROGRAM

CO-0041

REGIONAL AUTONOMOUS CORPORATIONS

EXISTING CORPORATIONS

- 1 CVS (Corporación Autónoma Regional de los Valles de Sinú y del San Jorge)
- 2 CORPOURABA (Corporación Regional de Desarrollo de Urabá)
- 3 COMB (Corporación de Defensa de la Meseta de Bucaramanga)
- 4 CODECHOCO (Corporación Regional para el Desarrollo del Chocó)
- 5 CORPOCALDAS (Corporación Autónoma Regional del Desarrollo de Caldas)
- 6 CORDER (Corporación Autónoma Regional de Risaralda)
- 7 CAR (Corporación Autónoma de las Cuencas de los Ríos Bogotá, Ubaté y Suárez)
- 8 CRQ (Corporación Autónoma Regional del Quindío)
- 9 CORTOLIMA (Corporación Autónoma Regional de Tolima)
- 10 CVC (Corporación Autónoma Regional del Cauca)
- 11 CRC (Corporación de la Reconstrucción y el Desarrollo del Departamento del Cauca)
- 12 CORPONARIÑO (Corporación Autónoma Regional para el Desarrollo de Nariño)
- 13 CAP (Corporación Autónoma del Putumayo)
- 14 CORPOGUAJIRA (Corporación Autónoma Regional de la Guajira)
- 15 CORPOCESAR (Corporación Autónoma Regional del Cesar)
- 16 CORPONOR (Corporación Autónoma Regional de la Frontera Nor-Oriental)
- 17 CORNARE (Corporación Autónoma Regional Rionegro-Nare)
- 18 CORPAMAG (Corporación Autónoma Regional del Magdalena y de la Sierra Nevada de Santa Marta)
- 19 INDERENA



This map prepared by the Inter-American Development Bank has not been approved by any competent authority and its inclusion in the loan document has the exclusive objective of indicating the area of influence of the project proposed for financing

COLOMBIA

Basic Socio-Economic Data
Statistics and Quantitative Analysis
Economic and Social Development Department

Executive Summary

Social Statistics

Land Area (Km2)	1992	1,138,914
Population (Thousands)	1992	33,425
Population (Average Annual Growth Rate)	1983-1992	1.9
Rural (Percent)	1992	27.0
Density (Population per Km2)	1992	29.3
Vital Statistics		
Crude Birth (Rate per 1,000 Population)	1991	24.3
Infant Mortality (Rate per 1,000 Live Births)	1991	23.0
Crude Death (Rate per 1,000 Population)	1991	5.8
Life Expectancy at Birth (Years)	1991	69.1
Illiteracy (Percent)	1990	13.3
Primary School Enrollment Ratio	1991	110.0

Economic Statistics

Market Exchange Rate (Pesos/US\$)	6-1993	858.7
GDP per Capita (Average Annual Growth Rate)	1983-1992	1.7
Labor Force (Thousands)	1990	10,394
Unemployment Rate (Percent)	1992	10.5
Consumer Prices (Twelve Month Variation)	3-1993	24.2
NF Public Sector Overall Balance (% of GDP)	1992	0.0
Domestic Credit (% of GDP)	1992	14.4
Balance of Payments (Millions of US\$)		
Current Account Balance	1992	903
Trade Balance	1992	1,433
Capital Account Balance	1992	220
Change in Reserves (- Increase)	1992	-1,347
Total External Debt (Millions of US\$)	1992	16,276
Total Debt Service (Millions of US\$)	1992	4,345
Debt to GDP Ratio (Percent)	1992	31.1
Debt Service Ratio (Percent)	1992	44.7

16 August 1993

COLOMBIA

Basic Socio-Economic Data

1. Exchange Rates

Pesos/US\$, End of Period Index 1980 = 100

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Market Rate	88.8	113.9	172.2	219.0	263.7	335.9	433.9	568.7	706.9	811.8
Real Effective Index	85.2	93.0	106.7	143.2	160.5	166.5	172.7	195.8	189.5	173.5

2. Prices

Average Annual Growth Rates in Percent

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Consumer Price Index	19.8	16.1	24.0	18.9	23.3	28.1	25.8	29.1	30.4	27.0
Wholesale Price Index	21.7	18.3	25.0	22.0	25.1	28.1	28.2	26.6	27.6	20.1

3. International Liquidity

Millions of US\$

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Reserves	2926	1790	2192	3394	3376	3716	3865	4460	6352	7561
Reserves minus Gold	1901	1364	1595	2696	3086	3248	3616	4212	6029	7389
Special Drawing Rights (SDRs)	198	0	0	140	162	154	150	163	163	58
Reserve Position in the IMF	274	...	...	...	...	...	...	...	...	95
Foreign Exchange	1429	1364	1595	2556	2924	3094	3466	4049	5866	7236
Gold (National Valuation)	1025	426	597	698	290	468	249	248	323	172

4. National Accounts

Millions of 1988 US\$ 1988 US\$

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Gross Domestic Product	35001	36301	37602	40036	42143	43967	45408	46984	48017	49795
GDP Per Capita	1237	1256	1275	1332	1376	1410	1431	1455	1461	1490

Annual Growth Rates in Percent - Constant Prices

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
GDP Per Capita	-0.6	1.2	1.1	3.8	3.4	2.2	1.6	2.3	0.6	1.8
GDP by Type of Expenditure (MP)	1.6	3.4	3.1	5.8	5.4	4.1	3.4	4.1	2.3	3.6
Consumption	0.3	3.0	2.2	3.0	4.0	4.5	3.6	4.0	1.2	3.8
Gross Domestic Investment	-2.2	-5.9	-9.6	4.4	9.2	8.0	-7.3	-3.1	-10.8	10.5
Exports of Goods and Services	-0.9	10.3	14.4	20.7	7.8	0.3	8.4	16.7	5.8	6.7
Imports of Goods and Services	-9.1	-4.0	-6.6	4.1	5.3	6.6	-2.8	10.8	-11.3	16.7
GDP by Sector of Origin (MP)										
Agriculture, Forestry and Fishing	2.8	1.8	1.6	3.4	6.4	2.8	4.3	6.6	4.9	1.1
Mining and Quarrying	14.2	22.0	38.0	62.1	24.1	4.5	11.6	3.0	0.8	3.9
Manufacturing	1.1	6.0	3.0	5.9	6.2	1.9	5.6	4.3	-0.5	5.1
Electricity, Gas and Water	1.5	5.1	3.1	6.0	8.9	5.3	5.2	4.9	4.0	-5.0
Construction	13.0	6.4	8.6	4.9	-10.0	13.2	-8.1	-15.3	4.4	9.8
Wholesale and Retail Trade	-0.4	2.0	1.8	3.6	4.4	5.0	1.8	2.8	1.3	3.8
Transport and Communications	-0.8	2.6	1.0	1.0	3.3	3.4	3.2	4.4	3.5	3.4
Financial Services	1.5	-1.1	2.5	6.0	3.4	5.3	1.1	5.1	1.5	3.9
Government	-2.0	8.9	4.3	6.1	7.1	7.0	4.0	7.1	4.1	4.6
Other Services	2.3	1.0	0.4	3.8	5.2	1.8	2.0	2.3	2.6	3.0

COLOMBIA

Basic Socio-Economic Data

4. National Accounts (cont.)

Composition in Percent - Current Prices

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
GDP by Type of Expenditure (MP)										
Consumption	82.9	81.6	79.7	75.2	76.0	75.6	75.8	76.1	76.7	...
Gross Domestic Investment	19.9	19.0	19.0	18.0	20.0	22.0	20.0	18.2	15.3	...
Exports of Goods and Services	10.5	11.9	13.8	18.8	16.9	16.3	18.0	20.4	21.1	...
Imports of Goods and Services	13.2	12.5	12.5	12.0	12.9	13.9	13.8	14.8	13.0	...
GDP by Sector of Origin (MP)										
Agriculture, Forestry and Fishing	18.7	17.4	17.0	17.5	18.1	16.7	16.1	16.1	17.4	...
Mining and Quarrying	2.9	3.3	4.2	4.9	6.5	6.2	7.7	8.7	7.5	...
Manufacturing	21.0	22.1	21.4	22.5	20.3	21.2	20.9	20.3	19.7	...
Electricity, Gas and Water	2.1	2.1	2.2	2.2	2.3	2.3	2.5	2.7	3.0	...
Construction	5.6	5.7	6.9	6.6	5.6	6.6	5.9	4.8	4.6	...
Wholesale and Retail Trade	13.5	13.9	14.1	13.6	14.1	14.4	14.2	14.2	14.8	...
Transport and Communications	8.3	8.2	8.2	7.8	8.1	8.3	8.4	9.1	9.1	...
Financial Services	13.4	12.6	12.5	12.1	12.1	11.7	11.3	10.8	10.5	...
Government	8.7	9.0	8.5	8.1	8.1	7.9	8.2	8.5	8.5	...
Other Services	5.8	5.6	5.2	4.9	4.9	4.7	4.9	4.9	4.9	...

5. Non-Financial Public Sector

As a Percent of GDP

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Current Revenues	19.4	20.4	22.2	26.6	24.7	23.6	22.8	23.5	24.9	25.0
Current Expenditures	17.0	17.2	13.5	15.4	16.2	16.8	17.0	17.3	18.4	18.1
Current Savings	2.4	3.2	8.7	11.2	8.5	6.8	5.7	6.2	6.5	6.9
Capital Expenditure	10.2	10.1	13.3	11.3	9.9	9.0	7.6	6.5	6.4	6.9
Overall Balance (- Deficit)	-7.8	-6.9	-4.5	-0.1	-1.4	-2.2	-1.9	-0.3	0.1	0.0
Domestic Financing	3.7	4.4	0.5	-3.5	1.3	0.2	1.3	0.7	0.8	0.6

6. Monetary Survey

As a Percent of GDP

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Domestic Credit	18.7	21.2	21.8	20.5	18.4	20.4	...	...	...	14.4
Public Sector	2.2	4.7	6.0	4.1	3.2	4.4	...	...	...	0.7
Private Sector	16.3	16.1	15.6	16.1	14.1	16.0	...	...	...	13.7
Money (M1)	10.3	9.8	9.2	9.3	9.4	8.9	9.0	8.5	8.2	9.3

7. External Trade

Direction in Percent Index 1980 = 100

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Exports of Goods (fob)										
Developed Countries	78.4	81.1	79.1	83.5	77.1	77.1	79.1	78.5	72.1	72.5
Developing Countries	21.6	18.9	20.9	16.5	22.9	22.9	20.9	21.5	27.9	27.5
Latin America	11.9	10.3	11.9	10.7	15.7	15.1	15.4	15.9	21.3	19.5
Imports of Goods (cif)										
Developed Countries	70.8	71.6	72.8	74.5	76.5	73.2	73.5	73.8	72.6	78.3
Developing Countries	29.2	28.4	27.2	25.5	23.5	26.8	26.5	26.2	27.4	21.7
Latin America	22.1	23.1	23.3	21.0	18.7	20.3	22.0	19.9	22.5	16.3
Terms of Trade Index	94.2	100.7	92.2	119.8	92.1	91.5	87.6	81.9	77.5	73.0

COLOMBIA

Basic Socio-Economic Data

7. External Trade (cont.)

	Composition in Percent									
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Exports of Goods (fob)										
All Food	62.1	63.5	60.2	67.9	42.7	44.0	37.6	33.1	28.7	...
Agricultural Raw Materials	4.8	5.3	5.6	3.9	4.0	5.4	4.9	4.4	5.4	...
Fuels	14.9	15.2	16.5	13.1	33.3	26.1	32.5	37.1	30.8	...
Ores and Metals	1.7	2.3	2.0	1.4	1.9	3.7	3.5	2.7	3.0	...
Manufactured Goods	16.5	13.7	15.6	13.7	18.1	20.9	21.5	22.7	32.2	...
Chemicals	3.4	3.1	3.6	2.8	3.8	4.3	3.5	3.4	4.9	...
Machinery and Transport Equipment	1.5	1.0	1.1	1.3	1.2	1.2	1.2	1.3	2.6	...
Other Manufactured Goods	11.6	9.6	10.8	9.7	13.1	15.4	16.8	18.0	24.6	...
Imports of Goods (cif)										
Capital Goods	38.0	35.0	31.7	35.7	35.6	34.5	34.4	36.0	31.6	...
Consumption Goods	10.8	9.6	9.4	9.9	11.9	10.6	10.1	9.9	12.5	...
Intermediate Goods	51.2	55.4	58.9	53.2	51.6	53.9	54.8	53.1	55.9	...
Fuels	12.9	9.9	11.1	3.4	2.4	3.0	4.2	5.7	5.7	...
Other	...	...	...	1.2	1.0	0.9	0.6	1.0	0.0	...

8. Balance of Payments

	Millions of US\$									
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Current Account Balance	-3003	-1401	-1809	383	336	-216	-201	542	2349	903
Trade Balance	-1494	246	-23	1922	1868	827	1474	1971	2959	1433
Exports of Goods (fob)	2970	4273	3650	5331	5661	5343	6031	7079	7507	7285
Imports of Goods (fob)	4464	4027	3673	3409	3793	4516	4557	5108	4548	5852
Service Balance	-1673	-1946	-2247	-2324	-2533	-2007	-2573	-2455	-2308	-2070
Freight and Insurance	-168	-134	-115	-151	-147	-175	-148	-133	-102	-154
Travel	-80	-84	-121	-193	-317	-77	-159	-48	-41	65
Investment Income	-1176	-1510	-1582	-1740	-1968	-1742	-2291	-2269	-2000	-1802
Other Services	-168	-151	-340	-185	-151	-59	37	66	-94	-231
Unrequited Transfers	164	299	461	785	1001	964	898	1026	1698	1540
Private	145	289	455	801	1009	975	912	1041	1712	...
Official	19	10	6	-16	-8	-11	-14	-15	-14	...
Capital Account Balance	1434	944	2236	1160	-1	939	478	-2	-783	220
Non-Monetary Sector	1370	1132	2233	2472	234	738	398	-29	-149	-102
Private Sector	1179	755	1922	1945	439	372	216	-15	-34	787
Direct Investment	514	561	1016	642	293	159	547	484	433	723
Portfolio Investment	-2	-3	-1	30	48	0	179	-4	81	82
Other Long-Term	914	909	1037	1324	61	309	-150	-315	-371	43
Other Short-Term	-247	-712	-130	-51	37	-96	-360	-180	-177	-61
Government Sector	191	377	311	527	-205	366	182	-14	-115	-888
Long-Term	102	355	298	473	-211	366	77	31	0	-544
Short-Term	89	22	13	54	6	0	105	-45	-115	-344
Monetary Sector	64	-188	3	-1312	-235	201	80	27	-634	322
Long-Term	0	0	0	0	0	0	0	0	0	0
Short-Term	64	-188	3	-1312	-235	201	80	27	-634	322
Change in Reserves (- Increase)	1839	381	-154	-1292	-402	-193	-434	-610	-1836	-1347
Errors and Omissions	-270	76	-273	-251	67	-530	157	70	269	224

COLOMBIA
Basic Socio-Economic Data

9. External Debt

	Millions of US\$ Ratios in Percent									
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Total Debt	11411	12039	14244	15361	17009	16994	16877	17240	17369	16276
Long-Term Debt	8151	9171	11140	13764	15353	15384	15260	15802	15617	14638
Public and Publicly Guaranteed	6873	7734	9572	12179	13829	13846	13988	14679	14503	13524
Bilateral	1346	1469	1891	2279	2527	2512	2382	2437	2315	2341
Multilateral	2154	2334	3408	4560	5774	5612	5650	6102	6158	5887
Bond Holders	20	17	16	46	106	104	277	275	359	532
Banks	2893	3258	3406	4284	3979	4256	4146	4208	4148	4138
Suppliers	298	483	601	635	680	664	713	832	806	406
Other Creditors	162	173	250	375	763	698	820	825	717	220
Private Non-Guaranteed	1278	1437	1568	1585	1524	1538	1272	1123	1114	1114
Use of IMF Credit	0	0	0	0	0	0	0	0	0	0
Short-Term Debt	3260	2868	3104	1597	1656	1610	1617	1438	1752	1638
Interest Arrears on Debt	0	0	5	0	2	1	3	28	20	15
Total Debt Service	1597	1620	1979	2268	2681	3101	3718	3653	3643	4345
Public and Publicly Guaranteed	912	1088	1414	1848	2389	2763	2904	3113	3089	3899
Bilateral	126	142	216	271	359	328	405	360	436	606
Multilateral	299	343	423	625	795	893	873	1004	1093	1405
Private Non-Guaranteed	326	217	206	251	208	177	630	397	405	262
IMF Repurchases and Charges	0	0	0	0	0	0	0	0	0	0
Short-Term Debt (Interest only)	359	315	359	169	84	161	184	143	149	184
Debt to GDP Ratio	35	35	39	40	41	39	36	35	35	31
Debt Service Ratio	39	30	43	34	38	44	49	40	38	45

... Not Available

0.0 Indicates that the amount is nil or negligible

COLOMBIA

Basic Socio-Economic Data

Sources and Notes

Executive Summary

Social Statistics:

Land Area: Organization of American States (OAS), América en Cifras 1974.

Population: IDB estimates based on data from Latin America Demographic Center (CELADE) and United Nations Population Division.

Vital Statistics:

World Bank, Social Indicators of Development - 1993 Edition and Economic Commission for Latin America and the Caribbean (ECLAC), Statistical Yearbook - 1992 Edition.

Economic Statistics:

Labor Force: World Bank, Social Indicators of Development - 1993 Edition.

Unemployment: Programa Regional del Empleo para América Latina y El Caribe (PREALC).

1. Exchange Rates:

International Monetary Fund (IMF), International Financial Statistics (IFS).

Real Effective Index: IDB estimates based on data from the IMF, IFS.

2. Prices:

IMF, IFS. Annual figures are expressed as average annual growth rates; monthly figures as a twelve month variation.

3. International Liquidity:

IMF, IFS.

4. National Accounts:

GDP in 1988 US Dollars: IDB estimates.

GDP by Type of Expenditure and Sector of Origin: Departamento Administrativo Nacional de Estadística.

5. Non-Financial Public Sector:

Departamento Nacional de Planeación and Contraloría General de la República.

6. Monetary Survey:

IMF, IFS (end-year observations).

7. External Trade:

Trade by Direction: IMF, Direction of Trade Statistics (magnetic tapes).

Terms of Trade: ECLAC, Balance Preliminar de la Economía de América Latina y el Caribe, 1992.

Export Composition: United Nations Statistical Division (UNSTAT) Commodity Trade (COMTRADE) Data Base; Exports include Re-Exports.

Import Composition: Revista del Banco de la República. Fuels include Crude Petroleum.

8. Balance of Payments:

Departamento Nacional de Planeación, División de Economía Internacional and IMF Balance of Payments Statistics (magnetic tapes).

9. External Debt:

World Bank, World Debt Tables (magnetic tapes).

COLOMBIA
OPERATIONS DEPARTMENT
OPS/TTC/IRO

IDB LOANS

APPROVED AS OF JULY 31, 1993

	US\$Thousand	Percentage
TOTAL APPROVED *	5,240,564	100.0%
DISBURSED	4,128,877	78.8%
CANCELLATIONS	369,802	7.1%
UNDISBURSED BALANCE	1,111,687	21.2%
PRINCIPAL COLLECTED	1,185,593	22.6%
APPROVED BY FUND		
ORDINARY CAPITAL	4,479,283	85.5%
FUND FOR SPECIAL OPERATIONS	698,268	13.3%
SOCIAL PROGRESS TRUST FUND	49,008	0.9%
VENEZUELAN TRUST FUND	0	0.0%
OTHER FUNDS	14,005	0.3%
APPROVED BY SECTOR		
AGRICULTURE AND FISHERY	464,463	8.9%
INDUSTRY AND MINING	328,026	6.3%
TOURISM AND MICROENTERPRISE	14,000	0.3%
ENERGY	2,179,048	41.6%
TRANSPORTATION AND COMMUNICATIONS	600,422	11.5%
EDUCATION SCIENCE AND TECHNOLOGY	157,165	3.0%
PUBLIC AND ENVIRONMENTAL HEALTH	547,129	10.4%
URBAN DEVELOPMENT	382,969	7.3%
PLANNING AND REFORM	527,808	10.1%
EXPORT FINANCING	0	0.0%
PREINVESTMENT AND OTHER	39,534	0.8%

* Net of cancellations with monetary adjustments and export financing loan collections.

COLOMBIA TENTATIVE LENDING PROGRAM FOR 1993-1995				
YEAR			SECTOR	AMOUNT (US\$M)
	LOANS			
1993	005/LC	Revolving Line of Credit PPF	PR	6.0
	CO-0041	Environmental Program	ENV	120.0
	CO-0037	Global Microenterprise Credit	ME	50.0
	CO-0221	Porce II Hydroelectric Project	EN	330.0
	CO-0082	Medellín River Decontamination	SAN	100.0
	CO-0059	Pacific Coast Development	DU	50.0
	CO-0055	Land Improvement	FO-PA	150.0
		SUBTOTAL 1993		806.0
1994	CO-0083	Bogota Urban Development	DU	90.0
	CO-0088	Health Policies and Service Improvement for Low-Income Sectors	SA	100.0
	CO-0188	COLFUTUTURO	ED	30.0
		SUBTOTAL 1994		220.0
1995	CO-0154	Multisectoral Global Credit Program	CR	300.0
	CO-0036	Regional Highways	TR	100.0
	CO-0132	Technical and Vocational Training	ED	100.0
	CO-0134	COLCIENCIAS III	ED	50.0
	CO-0138	FINDETER II	DU	100.0
		SUBTOTAL 1995		650.0
		GRAND TOTAL LOANS		1676.0
	TECHNICAL COOPERATION			
1993	ATN/JF-4154-CO	Caribbean Pine Plantation and Resin Plant	ENV	1.9
	9301368	Public Sector Investment Project Bank	PRE	1.1
	9305261	Service System and Social Indicator Development in an Urban Community	DU	0.7
	9306110	Wayuu Irrigation Project	AGR	0.2

ENVIRONMENTAL PROGRAM

(CO-0041)

EXECUTIVE SUMMARY

BORROWER AND GUARANTOR: Republic of Colombia

EXECUTING AGENCY: National Planning Ministry (DNP)

AMOUNT AND SOURCE: IDB: US\$ 58 million (OC)
US\$ 23 million (FSO in local currency)
Local counterpart funding: US\$ 54 million
Total: US\$135 million

TERMS AND CONDITIONS: Amortization period: OC 25 years; FSO: 30 years
Grace period: OC: 5 years; FSO: 7 years
Disbursement period: 5 years
Interest rate: OC variable; FSO: 2% per annum
Inspection and supervision: 1.00%
Credit fee: 0.75% (only applicable to the ordinary capital)

OBJECTIVES: The program seeks to promote sustainable natural resource management and to curtail environmentally damaging practices. It also seeks to strengthen the institutional structures responsible for formulating and implementing environmental policy, to expand the base of knowledge regarding environmentally sustainable activities, and to promote regional public and private initiatives aimed at combating environmental problems. The specific objectives of the program include: (i) reclamation, conservation, reforestation, and implementation of more appropriate land use practices in important watersheds and mangrove swamps; (ii) reversal of environmental deterioration in important and fragile ecological zones; (iii) reorganization and strengthening of the organizations responsible for formulating and carrying out environmental policy; (iv) extension of environmental education programs; and (v) establishment of a mechanism to finance regional environmental initiatives by public and nongovernmental organizations.

DESCRIPTION:

The proposed Environmental Program includes three components, as follows:

A. Management of Renewable Natural Resources: (i) protection, reforestation, and conservation of lands surrounding 56 watersheds and other important ecosystems in a region covering approximately 60,400 ha and affecting an area estimated at 2,000,000 ha; (ii) recovery and management of the fragile, extremely deteriorated ecological zone known as the Cienaga Grande de Santa Marta in the Magdalena River Delta and surrounding areas including the reopening and rehabilitation of 272 km of canals; (iii) execution of a resource management plan in the 58,300 ha Los Nevados National Park which involves investments in protections studies, training in community organization, and environmental education to conserve the park's biodiversity and protect important watersheds; and (iv) promotion of the cultivation of the guadua (bamboo) to protect areas suffering from environmental degradation and for commercial purposes.

B. Institutional Strengthening: (i) studies and training programs to improve the technical, administrative, and financial capacities of the program's executing units, especially the ten principal regional corporations participating in the Program, and the new Ministry of the Environment; (ii) environmental education and training programs for professionals employed in the ministries, regional corporations, departmental and local governments, and nongovernmental organizations; (iii) rural agricultural extension training designed primarily for employees of the Municipal Agricultural Assistance Units (UMATAS); and (iv) introduction of environmental studies into the curriculum of primary and secondary schools in rural areas and small cities.

C. Environmental Investments: establish a mechanism to extend resources to fund regional environmental initiatives in the following areas: (i) conservation and protection of areas of ecological importance; (ii) renewable natural resource management; (iii) improvements in the human environment; (iv) institutional development of environmental organizations; (v) prevention of disasters that result from environmental degradation; (vi) environmental education and (vii) prefeasibility and feasibility studies for projects in the above mentioned areas.

**ENVIRONMENTAL
CLASSIFICATION:**

The Environmental Management Committee, at its meeting of February 2, 1992, classified this as a

Category I operation, one which is designed to effect positive changes on the environment. The environmental summary of the program was presented to the Committee May 25, 1993 and subsequently approved.

BENEFITS:

The program will have a favorable impact on the environment as it will advance efforts to recover, conserve, and protect numerous environmentally significant and fragile areas. The program will also strengthen the institutions responsible for formulating and implementing environmental policy, especially the regional corporations and the Ministry of the Environment. Additionally, access to environmental education will be expanded, in particular for professionals and technicians in the field, rural agricultural extension workers, and primary and secondary school students. Finally, the establishment of a specific financial vehicle will promote environmental initiatives in regional priority areas, undertaken by departmental, municipal, and regional government units with possible participation of NGO.

RISKS:

The program's technical risks are limited because most of the activities contemplated are already underway or have been implemented in other regions of the country and, as a result, the executing agencies are generally experienced. Those that are less seasoned will have access to technical assistance and training. Execution could be delayed by the time frequently required to secure adoption of new types of technology by the beneficiaries of the watershed management projects. The project to recover the Ciénaga Grande de Santa Marta involves the greatest technical risks due to the level of degradation which has already occurred as well as the fragile conditions of the region. It will be necessary to proceed gradually with this effort, closely monitoring the effects on the delicate ecological balance as the channels supplying fresh and salt water are reopened. Although there is likely to be a change in the coordinating agency from DNP to the Ministry of the Environment (which continues to await final authorization from the Congress), during the implementation of the project, a special effort has been made to create a strong coordinating unit and to provide for a smooth transfer of that unit to the ministry, if such a change is necessary. A version of this temporary structure has been utilized successfully in past Bank-financed projects. Decentralization efforts already underway make it likely that SENA and MEN, the executing units for two of the training and education programs, will also undergo changes in

their organizational structures during the program's execution.

**THE BANK'S
COUNTRY STRATEGY:**

The priorities of the Bank in Colombia, highlighted in the Program Mission Report dated March 1993, include support for programs to protect the environment, expanded access to the benefits of economic growth for low-income groups, and promotion of institutional decentralization, all of which are directly addressed in this program.

I. FRAME OF REFERENCE

A. Environmental situation in Colombia

- 1.1 The environmental diagnostic study made as part of the preparation for the program identified serious problems. One third of the country's original forest cover has been eliminated. At the present time, 51.7 million ha is forest covered and it is estimated that some 600,000 ha are being deforested yearly. The greater part of this deforestation is caused by the pushing back of the agricultural frontier, infrastructure construction, urbanization and household use of wood. Approximately 8 million people are entirely dependent on fuelwood for preparing their food and 1.7 million people use it as secondary fuel. The rate of reforestation is estimated at no more than some 11,300 ha per year. 1/
- 1.2 The environmental problems induced by deforestation can be broken down into: (a) destruction of ecosystems, which leads to various species of flora and fauna either disappearing or becoming endangered; 2/ (b) soil degradation, and sedimentation of rivers and other bodies of water in regions susceptible to erosion; and (c) carbon dioxide emission from the burning of forests.
- 1.3 Forty-nine percent of Colombia's territory is affected by some degree of anthropogenic erosion, 3/ which is severe in the case of 17%. Erosion entails soil loss, lower production and degradation of the environment. Besides deforestation, man-made erosion can be caused by: (a) unsuitable soil-preparation practices; (b) overgrazing; (c) improper use of herbicides; and (d) lack of planning in construction of infrastructure works, and development of human settlements in unsuitable areas without measures to mitigate the environmental impact. It is estimated that between 170,000 and 200,000 ha of new land become subject to erosion each year. 4/
- 1.4 The zones most affected by erosion, and where most unsustainable land use is concentrated, are mainly in the mountains, which are home to the greater part of the farm population. Since agricultural land is limited in these areas, the small farmers work their plots more intensively without allowing them to lie fallow or observing the rotation practices necessary for proper soil

1/ According to the 1990-1994 Development Plan.

2/ Some 1,000 species of flora and 24 species of mammals and birds are currently threatened by deforestation (Colombia. National Report for UNCED, 1992).

3/ Erosion caused by human activity, as opposed to geological erosion, which is the result of action of natural forces.

4/ *Suelos y Bosques de Colombia*. Instituto Geográfico Agustín Codazzi, 1988.

management. In the severely erosion-impacted areas the soils are irrecoverable or could only be restored at very high cost. However, where the soils are slightly or moderately impacted, erosion can be controlled with revegetation and soil and water conservation practices.

- 1.5 The country's water resources are estimated at the equivalent of 150,000 cubic meters of water for every square kilometer of surface area. ^{5/} Despite this huge potential compared with almost any other country in the world, it must be noted that these flows are subject to fluctuations, which are partly due to changes in the ecosystems serving as regulators of the water system as a result of deforestation and poor land use.
- 1.6 Water pollution, especially of the rivers flowing through large urban centers, is the result of organic discharges of household or industrial origin. Atmospheric pollution exceeds international standards at a number of industrial sites and in major cities. The handling of industrial solid wastes, of which an estimated 11,200 tons per day is generated, leaves much to be desired; these wastes are mixed with household refuse and disposed of in sanitary landfills, open dumps, watercourses or clandestine dumps. This type of handling and disposal creates environmental problems with aquifer and surface water pollution, toxic gas generation and foci of infection.
- 1.7 The main direct causes of environmental degradation include: undervaluation of renewable natural resources (especially forests, soils and water), shortage of financing for small farmers to help them manage renewable natural resources, lack of environmental education and of appropriate technologies, and institutional weaknesses.
- 1.8 This environmental situation is associated with serious social problems in the Colombian countryside. The deterioration of natural resources has a negative impact on production and incomes and has increased the pressures on renewable natural resources. It is hoped that investments made in management of environmental and renewable natural resources will bring about a significant improvement in the quality of life in directly impacted communities and also in those in adjoining areas.

B. Colombia's environmental policy and strategy

1. Environmental policy

- 1.9 The general objectives of the environmental policy laid down in the 1990-1994 Economic and Social Development Plan are the following:

^{5/} *Revista de las Corporaciones Regionales*, No. 2, 1992.

- a. Generate alternatives to the use of natural resources that are economically, ecologically and socially sustainable and prevent or mitigate possible negative environmental impacts that productive activities can cause, jeopardizing the nation's natural resource endowment and impairing the quality of life.
 - b. Conserve and rehabilitate renewable natural resources and the quality of the environment and redirect land settlement processes with a view to discouraging settlement at the expense of fragile areas.
 - c. Encourage sustainable productive activities by means of tax and price policies that will help foster proper use of natural resources and promote environmentally sound investments.
 - d. Improve the quality of the environment in urban centers and secure greater community participation in care of natural resources and the environment, in both urban and rural areas.
 - e. Adjust and strengthen environmental management by means of better institutional and legal arrangements, and incorporate environmental considerations in the planning and decision processes concerning development programs and projects.
 - f. Build a greater awareness and understanding of natural resources and the environment by means of basic and applied research that will enable sustainable use to be made of them.
- 1.10 The national environmental policy aims to secure active involvement of all private productive sectors, the government and the people in generation of the financial resources and actions that will make it possible to conserve and restore the natural-resource base. This would serve to guarantee an adequate supply of goods and environmental benefits that would provide the foundation for sound economic and social development of the country.
- 1.11 According to Colombia's report for the United Nations Conference on the Environment and Development (UNCED) in 1992, the percentage of gross domestic product (GDP) to be used for improving the country's environmental situation would double by 1995, using not only international financing for the purpose but also property taxes and fees for use of natural resources together with charges for pollution as the main revenue sources.
- 1.12 In 1991 the Colombian government promulgated a new constitution which lays down the bases for protection of the environment, of natural resources and of the quality of life for the population, and stipulates that measures shall be taken for protection of the environment and natural resources. These measures are designed to combat and reverse the main environmental degradation processes. Regulations are to be introduced for implementation and enforcement

of these measures, application of which is urgently needed in light of Colombia's environmental problems.

- 1.13 The document produced by the National Economic and Social Policy Council (CONPES), Una Política Ambiental para Colombia [An Environmental Policy for Colombia] (Document DNP-2544-DEPAC) of August 1, 1991, recommends consolidation of the conservation and forestry development strategies, strengthening of environmental management in the different productive sectors and territorial subdivisions, and reorganization of the institutions charged with managing renewable natural resources and the environment.

2. Plan de Acción Forestal Tropical para Colombia [Tropical Forestry Action Plan for Colombia] (TFAPC)

- 1.14 The Tropical Forestry Action Plan for Colombia is one of the central elements of the environmental policy. This plan is an outgrowth of the Tropical Forestry Action Plan (TFAP), an international initiative designed to halt the deterioration of tropical forests and set national plans in motion in the countries interested in preserving and restoring their forests. In 1989, after two years of formulation and preparation, with the participation of government agencies and nongovernmental organizations involved in forest-related matters and environmental concerns, CONPES officially approved the establishment of the TFAPC.
- 1.15 The TFAPC calls for the promotion and execution of projects consistent with the following strategies: (a) restoring and conserving the equilibrium of forest ecosystems; (b) easing of the pressure on natural forests; (c) increasing the area of forest plantations; and (d) working toward achievement of conditions conducive to forest development and sustainable management of the country's natural resources.
- 1.16 The plan was presented to the international community in June 1989, at which time an extensive analysis was made of its possible impact. Based on a revision of March 1992, the government has been doing the necessary fine-tuning and has taken significant steps toward identifying and preparing projects, at the same time as it has made institutional changes in the environmental sector.
- 1.17 In addition, over recent years study has been devoted to introducing a Forestry Incentive Certificate (CIF) designed to spur private investment in forest plantations for essentially productive purposes; the CIF is currently under consideration by Congress. The government trusts that this mechanism will induce reforestation of over 100,000 ha in the coming five years. The CIF would be intended chiefly for establishing industrial plantations while the activities to be financed by the program are aimed at improving land-use systems by making them more integral and giving consideration to ecological improvement. The CIF is in principle available to anyone, but all experience in the use of similar incentives in

Chile and Costa Rica indicates that the majority of CIF beneficiaries are likely to be industrial enterprises and large farmers; the main beneficiaries of the program forestry investments would be small and medium-scale farmers.

C. Institutional framework

1. Present situation

- 1.18 Responsibility for environmental matters in Colombia is spread among a number of national-level entities, which gives rise to manifest conflicts and gaps in coverage while at the same time lessening contact between the users of natural resources and the authorities responsible for nation-wide application of environmental legislation. At present, the National Planning Department (DNP) is responsible for formulating economic, social and environmental policy and overseeing the system of regional corporations. The Institute for Renewable Natural Resources (INDERENA) is the primary agency responsible for implementing government policy and programs for protection of the environment in the 75% of Colombian territory in which 40% of the country's population lives, and the regional corporations are responsible for the remaining 25% of territory which is home to 60% of the total population. There are cases where the jurisdiction demarcation lines between INDERENA and the corporations are not clear, causing conflicts between the institutions.
- 1.19 Because of INDERENA's traditional emphasis on conservation of rural areas, management of the urban centers which are home to 70% of the population has been left mainly to the Ministry of Health or the municipal authorities which, since they have their main focus in other areas, are underfunded, and do not have the requisite specialized staff, have not performed these functions adequately.
- 1.20 INDERENA's attachment to the Ministry of Agriculture and its consequent identification with the agriculture sector impaired its capacity to regulate the production sector's activities while also causing the handling of environmental matters to be seen as part of agricultural activity. Numerous other national-level agencies attached to the Ministries of Health, Agriculture, Mines, Works and Defense are also responsible for applying environmental codes, resolutions, and decrees issued for a variety of purposes, with no common guidelines or criteria.
- 1.21 Since the promulgation of the new constitution in 1991, the regional corporations have concentrated on implementation of environmental policy. INDERENA, which initially had nation-wide jurisdiction, has gradually been delegating its powers to the regional corporations. The positive experience and results from the corporations' environmental work have generated legislative and financial support.

- 1.22 In accordance with the environmental requirements laid down in the 1991 Constitution, certain departments and municipalities have established secretariats and divisions to coordinate the execution of environmental plans, programs and projects and to safeguard the quality of natural resources and the environment in their areas.
- 1.23 In the private sphere, Colombia has a well-established tradition of citizen participation in the care and conservation of public lands, culture and the environment. The most representative organizations in urban environmental protection have been the nonprofit foundations, while in the rural context local improvement associations and boards have featured prominently.
- 1.24 The nongovernmental organizations (NGOs) are actively involved in the study of environmental problems. Their chief fields of action have been environmental education, research on ecosystems, implementation and validation of alternative systems and appropriate technologies, promotion of social development for biodiversity conservation, protection of the environment and natural resources by means of grassroots movements, and support for formulation of environmental policies.
- 1.25 A recent outcome of the NGOs' activity has been the establishment of ECOFONDO. This is a fund formed by 240 NGOs active in the environmental sector and, with advisory assistance from the government, it will serve to mobilize resources initially deriving from the U.S. government's Enterprise for the Americas initiative and the forgiving of Canadian-Colombian bilateral debt to the benefit of environmental projects and activities carried out by the NGOs. It is estimated that ECOFONDO will have around US\$5 million a year to disburse to the NGOs over a 10-year period. To facilitate the setting up of ECOFONDO's administrative structure it has been given a US\$500,000 grant from the U.S. Agency for International Development (USAID).

2. Plans for institutional development in the environmental area

- 1.26 For its part, the Colombian government has proposed, through the document Una Política Ambiental para Colombia, institutional coordination under the leadership of a Ministry of the Environment, with the aim of ensuring performance of the duties and observance of the rights of the State and of private individuals in connection with the environment and the nation's natural-resource endowment. The new ministry will be required to impose order on the institutional confusion currently prevailing in the sector. The actions in the environmental field would be implemented by public agencies, private organizations and mixed entities, including some 30 regional corporations that would cover the entire country.
- 1.27 The draft law on establishment of the ministry was submitted to Congress in 1992 and has received much public attention in consultations at both the national and regional level. In May 1993

the Senate committee responsible for environmental affairs approved the draft law with minor modifications. In June 1993 the full Senate approved the majority of the bill's articles, other than those dealing primarily with formation of the new regional corporations. The committee and the full chamber still have to vote on the proposal. Even if it is approved in 1993, it would take about two years for the ministry to become operational, since: (a) it has not been possible to process an initial budget for 1994; (b) a certain amount of time will be needed to liquidate INDERENA; and (c) INDERENA's responsibilities will have to be transferred to the new ministry.

- 1.28 The Ministry of the Environment would be responsible for national policy on management of the environment and of natural resources, being charged with formulating the policies and regulations that would govern the planning, management and use of physical and living resources with a view to promoting their sustainable development.
- 1.29 The Ministry of the Environment would take over the functions previously performed by INDERENA, the Ministry of Agriculture, the Ministry of Health, the Ministry of Mines and Energy and the DNP with respect to protection of the environment and renewable natural resources. The ministry would be a member of CONPES (the National Economic and Social Council).

D. Participation by the Bank and other international agencies

- 1.30 The proposed program is consistent with the programming paper for Colombia (PMP) approved in March 1993, which specifies as priorities for 1993-1995 protection of the environment, support for modernization of the economy and expanded access to the fruits of economic progress for low-income groups. The Bank reaffirmed in the PMP its support for the reorganization of the Colombian State, which includes institutional decentralization and the establishment of the new Ministry of the Environment.
- 1.31 The Bank is processing a program for the sustainable development of the Pacific Coast (CO-0059), which also has a significant environmental focus. This program's general objective is to improve the quality of life for the people living in the area concerned by means of policies on and investments in health, education, sanitation, energy and institutional strengthening projects together with support for small productive projects and microenterprises.
- 1.32 In recent years the Bank has supported initiatives in the environment and natural-resources sector by means of various short-term technical cooperation operations. In February 1993 the Bank authorized a grant of US\$1.94 million equivalent from the Japanese Special Fund for a feasibility study, a pilot afforestation project and a plant for Caribbean pine resin distillation in the Eastern Plains (ATN/JF-4154-CO).

- 1.33 The proposed program originated with the government's participation in the TFAP, with support and encouragement from UNDP, FAO and the IDB, among others. UNDP is financing a technical assistance program for the DNP on the different aspects of environmental policy; FAO is supervising a US\$1 million grant from the Dutch government for the operation of the TFAPC up to 1994. In addition, the TFAPC has received bilateral assistance from other countries such as Japan, Germany and the Netherlands for specific projects. The World Bank is processing an operation that would focus on forestry policy, strengthening of forest conservation, and administration of the national parks in the Pacific Coast region. The World Bank program also deals with microwatershed management in areas other than those of the proposed program, and upgrading of the country's formal forestry education and training. This program has an approximate cost of US\$63 million and would go to the Board at the end of this year. The coordinating units of the program under study and of the IBRD program would have a similar structure and the two operations would be implemented in a coordinated fashion. The design of the IDB program takes into consideration what the other international agencies are doing in the sector.
- 1.34 On October 18, 1991, the government submitted a request to the Bank for financing of certain of the TFAPC investments. Since then, the Bank team has been working with the DNP in the preparation of the different components of the program. The outcome of these activities has been the formulation of a broad-ranging program that addresses not only the problems and strategies of the TFAPC in the forestry field but also supports environmental institutional strengthening and promotes local initiatives for devising and executing environmental investments.

E. Design of the program

- 1.35 The environmental program addresses three fundamental elements of Colombia's present environmental problems: (a) the deterioration of renewable natural resources; (b) the recognition on the part of the government of the need to strengthen environmental institutions; and (c) the negative socioeconomic repercussions of environmental deterioration, which spurs efforts to remedy the situation by means of local initiatives for different types of investments.
- 1.36 The program actions will concentrate mainly on areas of high environmental significance where the environment is becoming degraded and there is scope for a considerable impact on low-income groups. The target regions were also selected in light of the institutional capacity of the executing agency and taking into account the fact that no other sources of financing such as the World Bank or bilateral programs were available.
- 1.37 It will be apparent from the foregoing that there is no single solution to Colombia's environmental problems but that rather a combination of activities is called for. The three subprograms of

the proposed operation are interconnected, mutually supportive and consistent with the country's environmental priorities. The first of these subprograms deals with the problems of degradation of plant cover, soil, forests and water, under the TFAPC strategy. The second addresses the institutional deficiencies and weaknesses in the environmental sector and specifically in the program implementing agencies, and supports the establishment of the Ministry of the Environment. It further supports environmental education and training for those who work in the sector, from ministry staff to rural extension workers and employees of environmental NGOs. The third subprogram seeks to extend the coverage of environmental investments in the country and follows the government's decentralization policy by promoting local and regional initiative.

- 1.38 The program has been formulated in accordance with the Bank's guidelines and is consistent with its policies and priorities; it will contribute to improvement of the environment and of the quality of life of low-income groups, and to the conservation and management of renewable natural resources.

II. THE PROGRAM

A. Program objectives

- 2.1 The general objective of the program is to assist in the reversal of the deterioration of natural resources and to strengthen the environmental management capability of the various echelons of the public administration and of community organizations. The program supports the process of decentralization of the State by providing financial incentives for local initiatives for dealing with environmental problems.
- 2.2 The specific objectives of the program are as follows:
 - a. To promote the sustainable management of renewable natural resources through the establishment of agroforestry and forest grazing systems and promotion of reforestation and soil conservation works in selected microwatersheds.
 - b. To halt and reverse the environmental deterioration of environmentally important and fragile areas such as the ecological complex of the Santa Marta Wetlands lagoon system and Los Nevados National Park.
 - c. To strengthen the country's environmental institutions and also environmental education and training.
 - d. To establish a financing mechanism for environmental projects and initiatives of regional origin.

B. Description of subprograms

- 2.3 The operation includes three subprograms: (a) management of renewable natural resources; (b) institutional strengthening, and (c) environmental investments.
 1. Subprogram A: Renewable natural resource management
- 2.4 In accordance with the general objectives of the TFAPC, this subprogram is envisioned in terms of support for the development of communities of small and medium-scale farmers who live in watershed areas, in wetland areas that are currently deteriorating or at risk, and in buffer zones for protected areas and base their economy on use of renewable natural resources. The intention is to promote coordination in execution of projects of this type among regional corporations and development of an awareness among and training for communities, farmers, women's organizations and indigenous groups, and specialized extension personnel for execution of conservation projects and sustainable use of renewable natural resources.

- 2.5 To assist in these actions, publicity materials would be designed and distributed through the corporations, such as: leaflets, videos and other promotional materials, including some dedicated to the NGOs' participation in environmental work and women's organizations.
- 2.6 The actions under Subprogram A will focus on areas between the central and eastern cordilleras and the Atlantic coast region. These areas were selected on the basis of the following criteria: (a) existing forest and environmental problems, for which technically feasible solutions are available; (b) in the case of microwatershed projects, existence of externalities in the form of additional benefits that would accrue to municipal and village water-supply and irrigation systems, etc.; (c) availability of projects in a sufficiently advanced stage of preparation, without any major additional studies being required; (d) existence of agencies (corporations) with sufficient institutional capacity to execute the proposed investments, plus the initial interest displayed by the communities in participating; and (e) no duplication of investments envisaged by other international financing programs, such as the Natural Resource Management Program under consideration by the World Bank.
- 2.7 Subprogram A consists of four components that are described below:
- a. Microwatershed management
- 2.8 The aim of this component is to protect renewable natural resources by means of direct measures in 56 microwatersheds to improve land use on approximately 60,400 ha and indirectly benefiting some 2 million ha. The actions included in the microwatershed management component will directly benefit some 40,000 farmers and their families (see Annex II-2 on the preliminary pipeline of projects).
- 2.9 The microwatershed management projects are identified and prepared with the following basic objectives in mind: (a) to ensure sustainable use of soil and water resources to the benefit of the settled population and to resolve externalities connected with utilization of local and municipal water-supply systems by improving the quality and quantity of the water assigned to this purpose; and (b) to restore critical areas that have become degraded or are in process of degradation in selected microwatersheds which in turn form part of subbasins in which stage-wise intervention is planned, in a long-range process, with a view to arriving at sound land use and water resource management (see Annex III-1 regarding the project selection and appraisal criteria).
- 2.10 The management practices can be subdivided into seven basic types: (a) establishment of productive-protective forests; (b) biomechanical soil conservation works; (c) reforestation with fuelwood plantings; (d) reforestation with guadua angustifolia (a species of

bamboo native to the region); (e) replanting along watercourses; (f) agroforestry systems; and (g) forest grazing systems.

- 2.11 The actions involved will include financial contributions, technical assistance for validation and transfer of forestry, agroforestry and soil conservation technology, and assistance with the organization of farmers for managing the projects.

b. Restoration of the Santa Marta Wetlands lagoon system

- 2.12 The object of this component is to restore, plan and manage on an integral basis the lagoon complex formed by the Santa Marta Wetlands and the secondary wetlands of Pajara, Auyama, Bristol, Alfandoque, Piedra, Conchal and other adjoining floodprone areas, mangrove swamps and associated swamp forests, and the special management areas such as the Isla Salamanca Park and the Santa Marta Wetlands Wildlife Refuge. This object will be accomplished by means of an engineering project to reopen and correct a part of the presently blocked natural canal system that used to allow fresh water from the Magdalena River into the lagoon complex. This will require long-term maintenance of the canals and simultaneous reforestation measures and steps to conserve forests and protected areas, joint action with affected communities, and environmental education and information programs. This is a project that is being submitted individually as a program component on account of its complexity, the environmental importance of the area and the high level of environmental degradation. In addition, the cost of this project will be much higher than that of the individual microwatershed management projects.
- 2.13 The project includes construction of structures to regulate water inflow into the system and thereby influence the salinity levels and water circulation patterns. Bridges will be built and drainage systems installed along the Palermo-Sitionuevo-Remolino and Barranquilla-Ciénaga highways, in the first case to enable passage of the water from the Magdalena River to the coastal delta and in the second to facilitate the exchange of waters between the Caribbean Sea and the lagoon system wetlands.
- 2.14 The project will also help restore wildlife to the wetlands through the raising and releasing of native species as salinity conditions are improved, together with protection of the remaining 47,000 ha of swamp forest and planting of 12,000 ha of mangroves, activities in which the local communities will be involved.
- 2.15 The progress with the execution of the project will be carefully monitored by means of a system of sampling and analysis of key physical, chemical and biotic parameters which, upon being compared with the initial conditions, will provide the feedback necessary for adjusting the operation of the system.

c. Management of Los Nevados National Park

- 2.16 The aim of this component is to consolidate the park administratively and physically for the protection of ecosystems, in an area of 58,300 ha, with community participation. Work would be carried out on strengthening of safeguards and monitoring, establishment of the park's boundaries and research on its flora and fauna. A management plan will also be prepared for its buffer zone, which is crucial from the standpoint of conservation of biodiversity and protection of the watersheds in the central cordillera. Environmental education for residents and visitors will be included.

d. Promotion of production and use of guadua bamboo

- 2.17 The program to encourage the use of guadua and other bamboos is designed to assure a supply of these native species for protecting areas currently undergoing deterioration, primarily the headwaters of streams and rivers and areas alongside riverbanks, so as to control the quantity and quality of water available for human consumption and prevent erosion. It is further hoped that the socioeconomic circumstances of local communities can be improved by commercial cultivation of guadua. To accomplish these objectives the following activities are planned: (a) establishment of guadua plantations in different parts of the country (total of 3,600 ha); and (b) provision of assistance and training to growers in the management and use of guadua. The areas to be replanted and protected are located between the central and eastern cordilleras.

2. Subprogram B: Institutional strengthening

- 2.18 The main objective of this subprogram is to support and strengthen environmental organizations, and especially the agencies charged with executing the different components of the program, to enable them to perform their functions connected with natural resource management and conservation more effectively. The subprogram is split into four components, as follows:

a. Strengthening of program executing agencies

- 2.19 This component comprises studies, training and procurement of computers for the 10 regional corporations that will participate in Subprogram A.

(1) Studies

- 2.20 The studies are divided into two groups: the first is made up of those designed to help the corporations develop capacity for the execution of the proposed program, and for the environmental monitoring and renewable natural resource management functions from the technical and administrative and financial standpoint. It is proposed that 10 studies be made, on assessment of environmental impact, design and implementation of community participation

mechanisms, use of incentives for management and conservation of renewable natural resources and modernization of the corporations' administrative and financial systems (see Table 1 in Annex II-1).

- 2.21 The second group includes more general studies at the national level, such as environmental policy formulation, design of an environmental information mechanism, and management and administrative systems for the new ministry, which would be put into practice when the ministry is established. In addition, high-level consultancy services will be provided to advise the new ministry on finalizing its organization chart and to assist it with startup of its operations, and also to help with the transfer of the DNP's coordinating unit to the ministry (see Table 2 of Annex II-1). Even though important elements of environmental policy have been developed in the country, as noted in section B of chapter I, inclusion of a study on environmental policies is justified since its purpose would be to support regulations under the provisions of the Constitution and the new environmental law. As part of this effort, a component on evaluation of the efficiency of current environmental laws and policies is included.
- 2.22 For programming purposes, it is important to define the degree of interdependence of the studies to be financed. The majority of the specific studies, such as support for the corporations, are independent of the general studies, including for instance those connected with the administrative and financial strengthening of the corporations, design and implementation of community participation schemes, planning and management of water resources, and guidelines for and application of environmental impact assessments. They could accordingly be conducted separately from the general studies and be programmed for the first years of execution. The studies of the corporations, which would be more closely tied in with certain general studies, would be started as soon as those general studies are completed.

(ii) Training

- 2.23 The training courses for the executing agencies cover technical environmental and administrative and financial subjects. The technical courses are organized in eight environmental and renewable natural resource management modules, with a total of 130 courses. Eighty-six of these courses are for corporation staff, 19 for other agencies involved in execution of the program, and 25 will be for training the personnel of the new Ministry of the Environment (see Tables 3 and 4 of Annex II-1).
- 2.24 The administrative and financial courses (65 in all) include five subjects as detailed in Table 3 of Annex II-1. Fifteen of these courses are designed for strengthening corporations, six are for other agencies participating in the program, and a further six will be for staff of the future Ministry of the Environment.

b. Courses for environmental professionals

- 2.25 These are run under an environmental training and education program at national level given by the Instituto Colombiano para el Fomento de la Educación Superior [Colombian Institute for the Promotion of Higher Education] (ICFES), aimed at approximately 1,650 professional staff of the technical environmental units of the different government ministries, corporations, territorial entities and NGOs.
- 2.26 The program consists of 19 modules on general environmental topics that include, among others, environmental legislation and planning, watershed management, and ecological protection. The component is organized in 43 courses and 30 seminars (see Table 6 of Annex II-1).

c. Training of rural extension workers

- 2.27 The Servicio Nacional de Aprendizaje [National Apprenticeship Service] (SENA) will run a training program for rural extension workers that will cover 14 subjects, such as: the present environmental situation and the degradation processes affecting renewable natural resources, legal aspects, environmental monitoring and assessment, water and soil management, fauna and flora conservation, agricultural technologies for sustainable development, appropriate diagnosis methods, and selection and validation of technologies in extension programs.
- 2.28 The training will be given by two methods: (a) three courses per year (six-day courses) per participant; and (b) by means of distance instruction, which includes printed and audiovisual material that the participant studies independently. SENA has been using this methodology for a number of years and has developed a system for monitoring students and tracking their progress (see Tables 7 and 8 of Annex II-1).
- 2.29 It is estimated that some 3,000 extension officers would participate in the program, of whom 80% would be from the Municipal Agricultural Technical Assistance Units (UMATAs), 10% from the corporations and 10% from NGOs. All the country's rural municipalities will be represented. In addition, SENA will train 1,094 of its instructors as extension specialists in technology transfer in order to ensure follow-up and continuity of the program.

d. Environmental education for children

- 2.30 This component builds an environmental dimension into primary and secondary education in a practical and interdisciplinary fashion through the teaching of environmental concepts and execution of small educational environmental projects. It will be carried out in rural areas and small cities. The component will be run by the Ministry of Education, with a target of training 5,100 teachers in 1,030 municipalities, in order to reach some 500,000 children.

- 2.31 Over the past 18 months the Ministry of Education has held 18 workshops with teachers to identify the requirements of the program, the purpose of which is to set up environmental education in such a way that school and community play an integrated role in the process. These workshops covered 65% of the country.
- 2.32 One outcome of these workshops was the designing of a teacher training program. Five teachers per municipality will train the other teachers in their regions. The investments will also include three small education research studies that will be used as input in the program, together with financial resources to encourage environmental projects initiated by the schools in the way of trash recycling and small agroforestry gardens (see Tables 9 and 10 of Annex II-1).

3. Subprogram C: Environmental investments

- 2.33 The purpose of this subprogram is to establish a financing mechanism for environmental projects that can generate public benefits, 6/ developed on the initiative of the regions but having a national impact that warrants central government financing on nonreimbursable terms.
- 2.34 Although it is hard to quantify the actual demand there will be for such a mechanism, an initial sounding indicated the existence of an inventory of 1,043 projects representing US\$1.415 billion, not all of which would be eligible for the program since they do not meet the condition of generating primarily public benefits. Eighty-nine percent of the projects identified in the initial inventory were generated by the regional corporations and INDERENA.
- 2.35 The Operating regulations for the Subprogram (Annex III-2) give full details of the type of investments to be financed. The subject areas to be covered are:
- (i) Conservation of the country's natural resource endowment: actions to assist municipal and departmental conservation units now in place or being set up, and preparation of management plans in these areas.
 - (ii) Management of natural resources: pilot projects that take innovative approaches to resolve natural resources management, and utilization problems in ecologically vulnerable zones.

6/ Public benefits are understood to be those that have the following properties: (i) the marginal cost of satisfying an additional consumer is nil, and (ii) it is very difficult to exclude additional consumers from enjoying the good in question.

- (iii) Protection of the human environment: projects to monitor air and water quality, and characterization of these resources.
- (iv) Institutional development: support for the establishment and equipping of, and technical assistance to, municipal, departmental, and regional environmental planning units and offices.
- (v) Natural disaster prevention: identification of risks of natural disasters that could have a significant impact on ecologically vulnerable zones, and associated monitoring initiatives.
- (vi) Environmental education: formal and nonformal environmental education programs and development of instructional materials.
- (vii) Prefeasibility and feasibility studies for projects in the aforementioned areas.

2.36 Eighteen projects from the sample available were examined; 10 of these were submitted by local and regional governments, four by universities and four by NGOs in association with public entities, aggregating US\$10.4 million requested. Prefeasibility studies or detailed profiles are to hand for these projects, and an economic appraisal has been performed for one of them. Eleven have been appraised by the DNP and the other seven have been reviewed from the technical standpoint by the Bank. Average project size is US\$887,000 and the amount requested is US\$576,000. The total figure considered to be eligible in accordance with the subprogram regulations is around US\$6.7 million, on the basis of which project financing for the subprogram can be estimated at US\$25 million, inasmuch as the sample represents some 27% of the total (see Annex II-4).

C. Cost and financing

1. Cost of the program

2.37 The total cost of the program is estimated at US\$135 million equivalent, with IDB financing of US\$81 million (60%), for which ordinary capital funds in an amount of US\$58 million plus a loan of US\$23 million in Colombian pesos from the Fund for Special Operations would be provided. The FSO financing is justified by the high level of benefits accruing to low-income groups. The program would further include a local counterpart contribution of US\$54 million equivalent, of which US\$16.4 million would be in the form of the contribution of the farmers participating in Subprogram A in labor, tools and inputs for investments in reforestation and micro-watershed management, while US\$37.6 million would be financed by the government, the corporations and other participating entities.

The following tables set out the cost and the proposed financing arrangements, with a breakdown by investment category, subprogram and component. The detailed breakdown of the costs is in the Bank's technical files.

TOTAL CONSOLIDATED COST BY SOURCE OF FINANCING (US\$000)					
INVESTMENT CATEGORY	SOURCES OF FINANCING				
	IDB		LOCAL	TOTAL	%
	OC	FSO			
<u>Engineering and administration</u>	830	-	3,940	4,770	3.5
Works supervision	-	-	1,410	1,410	0.1
Administration	830	-	2,530	3,360	2.4
<u>Direct costs</u>	5,810	20,000	28,900	54,710	40.5
Civil works	3,820	6,180	-	10,000	7.4
Machinery and Equipment	970	140	910	2,020	1.4
Vehicles	190	1,360	-	1,550	1.1
Inputs and materials	830	12,320	-	13,150	9.7
Publicity	-	-	1,530	1,530	1.1
Labor	-	-	20,960	20,960	15.4
Technical assistance	-	-	5,500	5,500	0.4
<u>Associated costs</u>	20,760	-	3,650	24,410	18.1
Personnel	-	-	210	210	0.1
Studies and consulting services	6,520	-	3,140	9,660	7.1
Training	14,240	-	-	14,240	10.6
Land	-	-	300	300	0.2
<u>Environmental investments</u>	25,000	-	-	25,000	18.5
<u>Unallocated</u>	5,020	2,770	5,280	13,070	9.7
Escalation	2,170	1,460	1,020	4,650	3.5
Contingencies	2,850	1,310	4,260	8,420	6.2
<u>Finance charges</u>	580	230	12,230	13,040	9.7
Interest	-	-	11,200	11,200	8.3
Credit fee	-	-	1,030	1,030	0.7
Inspection and supervision	580	230	-	810	0.6
TOTAL	58,000	23,000	54,000	135,000	100.0
PERCENTAGE	43.0	17.0	40.0	100.0	

TOTAL PROGRAM COST BY SUBPROGRAM AND COMPONENT					
Subprogram/Component	IDB		LOCAL	TOTAL	%
	OC	FSO			
A. Renewable natural resources	11,170	20,000	24,070	55,240	40.9
1. Microwatershed management	5,720	13,340	18,980	38,040	28.2
2. Restoration of Santa Marta Wetlands	4,500	5,730	2,600	12,830	9.5
3. Los Nevados National Park management	250	930	1,080	2,260	1.7
4. Guadua bamboo promotion	700	-	1,410	2,110	1.5
B. Institutional strengthening	15,400	-	8,480	23,880	17.7
1. Studies and consultancy services	6,270	-	2,770	9,040	6.7
2. Training	8,530	-	5,710	14,240	10.6
3. Computer support	600	-	-	600	0.4
C. Environmental investments	25,000	-	-	25,000	18.5
Administration	830	-	3,940	4,770	3.5
Unallocated	5,020	2,770	5,280	13,070	9.7
Finance charges	580	230	12,230	13,040	9.7
TOTAL	58,000	23,000	54,000	135,000	100.0
PERCENTAGE	43.0	17.0	40.0	100.0	

2. Financing

2.38 The terms and conditions of the IDB financing are set out in the following table.

TERMS AND CONDITIONS	OC	FSO
Interest rate	7.5% (variable)	2% p.a.
Credit fee	0.75%	N/A
Inspection and supervision	1%	1%
Disbursement period	5 years	5 years
Grace period	5 years	7 years
Amortization period (including grace period)	25 years	30 years

III. EXECUTION

A. Execution arrangements

- 3.1 The DNP will be responsible for coordinating and executing the program. For this purpose a coordinating unit (CU) will be set up that will be under the direct supervision of the deputy director of the DNP. 7/ The participating executing agencies would be responsible for execution of their specific components and projects. The CU will function under the DNP's authority on a temporary basis until such time as the Ministry of the Environment is legally established and operational. The DNP undertakes to transfer responsibility for coordinating and executing the program to the Ministry of the Environment. This transfer will include records, equipment and, to the extent possible, personnel. The DNP will submit the proposed arrangements and timetable for the transfer to the Bank. 8/
- 3.2 The coordination arrangements comprise three basic areas: (a) administration, legal, financial and systems; (b) technical, for the programming, execution, monitoring and evaluation of the program; and (c) institutional strengthening. Coordination of these areas will be the responsibility of the CU in accordance with the DNP's policies and rules. The DNP will supervise the performance of these functions and will provide technical support and advice through its units, particularly the UDA and the DEPAC which participated in devising this program.
- 3.3 Subprogram A will be executed through 10 regional corporations. Other agencies that meet the eligibility criteria set forth in the program Operating Regulations, such as municipalities, departments and other regional corporations, might also participate. Subprogram B will be carried out by the Ministry of Education, SENA and ICFES and through contracts concluded by the CU with other entities for training and specific institutional strengthening studies. Subprogram C will be administered by FONADE and projects financed under that subprogram will be appraised by the CU.

B. Structure and coordination functions

1. Coordinating unit (CU)

- 3.4 The CU will be employed exclusively on coordination of the program and appraisal of its various projects; it will have a total staff of 33 and will report directly to the deputy director of the DNP. The basic functions of the CU will be: (a) to give technical

7/ See proposed resolution.

8/ See recommended contract clauses.

support to the participating agencies and to ensure that the program's objectives are achieved by means of timely and adequate supervision; (b) to appraise the projects submitted through Subprograms A and C; and (c) to supervise the processing of and recommend to the director of the DNP or person delegated by him the utilization of the program's resources.

- 3.5 The staff of the CU will be hired by the DNP and will be transferred, to the extent possible, to the Ministry of the Environment once the latter is operational. During the new ministry's first year of operation, the staff may be under contract to the DNP, to ensure the continuity of the systems and procedures applied.

a. Office of the Coordinator

- 3.6 The Office of the Coordinator will be made up of a full-time coordinator, appointed by the director of the DNP, and the administrator of Subprogram C. The office will include as support staff one assistant and one secretary.
- 3.7 The functions of the coordinator will be to ensure the general implementation of the program; direct the preparation of the annual work plans; supervise the execution of the program components; clear disbursements, transfers, contracts and agreements for the signature of the deputy director of the DNP; and serve as executive secretary of the Coordination Committee (see Annex II-3).

b. Financial coordination

- 3.8 The management of expenditure would fall to the General Secretariat and the Legal Office of the DNP. The CU will accordingly have a specialized group responsible for matters connected with use of financial resources, which will coordinate its activities with those of the Secretariat. This group, designated the Financial Affairs Secretariat, will be under the supervision of the program coordinator and will maintain permanent liaison with the technical sections of the CU and of the executing agencies.
- 3.9 The Financial Affairs Secretariat, made up of eight staffers, will be responsible for the financial execution of the program, will administer the program's financial resources and supervise and process disbursements in accordance with the program's Operating Regulations, will verify performance of the contracts concluded with the executing agencies, and will handle the accounts and audit of the program and prepare its financial statements in accordance with the Bank's requirements.

c. Technical coordination

- 3.10 The technical coordination group, designated the Technical Affairs Secretariat, will provide technical support to the executing agencies in formulating the Subprogram A projects, which includes

appraisal of the project proposals prepared by the corporations and other executing agencies and monitoring of their execution by means of the Subprogram A project monitoring system. This group will work in close collaboration with the Technical Secretariat of the TFAPC, which is already preparing Subprogram A project profiles with the assistance of the DNP's UDA and DEPAC.

- 3.11 In addition, the Technical Affairs Secretariat will assist with the preparation of the Subprogram C projects submitted by various applicants and will perform the technical and economic appraisals of these. The group will be made up of 11 officers qualified in the required specialties required to perform this work (see Annex II-3).

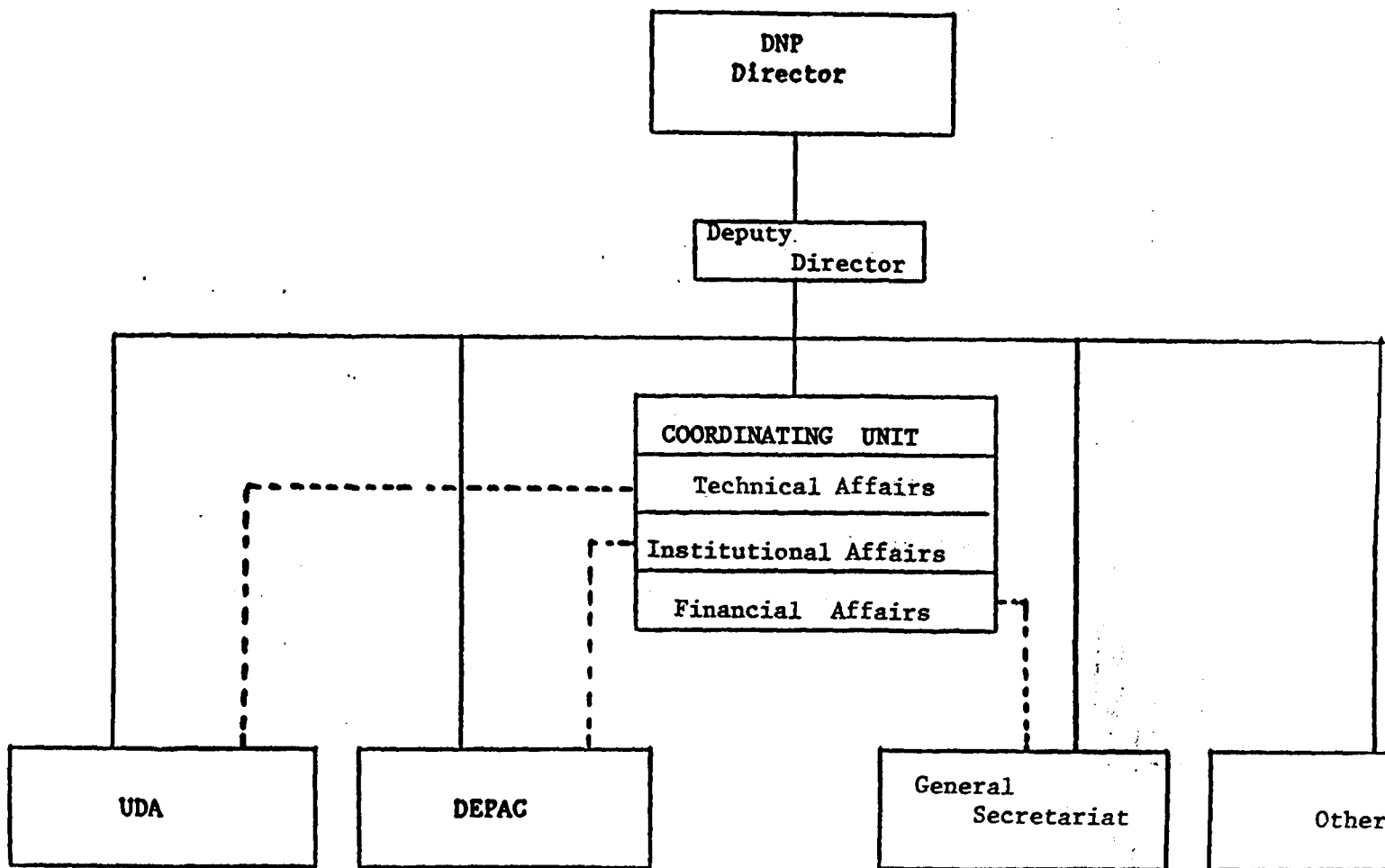
d. Coordination of institutional strengthening

- 3.12 A group designated the Institutional Affairs Secretariat would be formed in the CU and would have as its primary responsibility coordination and execution of Subprogram B. It would be responsible for commissioning the required consultancy services and studies and for supervising the environmental training and education programs.
- 3.13 The Institutional Affairs Secretariat will help with the preparation of projects requested through Subprogram C for the different participants, and will be responsible for the institutional and financial appraisal of these projects. The group will be made up of 10 members qualified in different specialties that will enable them to perform the functions mentioned. They will receive support and advisory services from the DNP's DEPAC and UDA; once the Ministry of the Environment is formed it is expected that a part of the DEPAC's functions will be transferred to the ministry to assure its continued support for the execution of the program.

e. Coordination Committee

- 3.14 To ensure more effective performance of the operating coordination functions, the program will have a Coordination Committee chaired by the deputy director of the DNP or person delegated by him, and made up of the heads of the Agricultural Development Unit (UDA), the Special Division for Corporation Environmental Policy (DEPAC) and the General Secretariat of the DNP; representatives of FONADE, ICFES, SENA, the Ministry of Education and INDERENA may also be called in. Once execution of the program has been transferred to the Ministry of the Environment, the borrower will submit to the Bank a proposal for the new membership of the committee.
- 3.15 The Coordination Committee's basic functions will be to approve the program's annual work plans and budgets, oversee its progress and make the necessary decisions for resolving problems identified during execution of same.

COORDINATING UNIT (CU) OF THE PROGRAM
IN THE NATIONAL PLANNING DEPARTMENT



reporting line

support relationship

COLOMBIA: ENVIRONMENTAL PROGRAM COORDINATING UNIT		
SUBPROGRAM A	SUBPROGRAM B	SUBPROGRAM C
1) CDMB-Corp. for the Protection of the Bucaramanga Meseta	1) Ministry of Education	FONADE (Administrator)
2) CORPAMAG-Auton. Regional Corp. of Magdalena and Sierra Nevada de Sta. Marta	2) SENA-National Apprenticeship Service	
3) CORPONOR-Auton. Regional Corp. of NE Frontier	3) ICFES-Colombian Institute for the Promotion of Higher Education	
4) CORTOLIMA-Auton. Regional Corp. of Tolima	4) FONADE (Administrator of studies and training for strengthening of program agencies	
5) CRC-Corp. for the Reconstr. and Devt. of Cauca Dept.		
6) CRQ-Auton. Regional Corp. of Quindío		
7) CVC-Auton. Regional Corp. of Cauca		
8) CVS-Auton. Regional Corp. of Sinú and San Jorge Valleys		
9) CARDER-Auton. Regional Corp. of Risaralda		
10) CORPOCALDAS-Caldas Auton. Regional Devt. Corp.		
11) Other entities meeting the operating eligibility criteria of the Operating Regulations		

2. Operating Regulations

- 3.16 Two sets of draft Operating Regulations for the execution of the program have been prepared; approval of these regulations by the Bank will be a prerequisite for the first disbursement from the program. 9/
- 3.17 The Operating Regulations for Subprograms A and B will include the general eligibility and appraisal criteria for Subprogram A projects, the financing, monitoring systems and operating arrangements for Subprograms A and B, the responsibilities of the different entities involved in the coordination and execution arrangements for the program, and the general policies of the program (see Annex III-1).

9/ See proposed resolution.

- 3.18 The Operating Regulations for Subprogram C will include the selection, appraisal and approval criteria for projects financed under this subprogram, together with eligibility criteria for entities and the financing arrangements and mechanism for execution and supervision (see Annex III-2).

C. Operational execution

1. Subprogram A: Renewable natural resource management

a. Microwatershed management

- 3.19 The agencies that will participate in this component will initially be seven corporations selected to execute projects in accordance with the criteria set forth in chapter II. ^{10/} The execution of these projects will be governed by agreements to be concluded between the DNP and each of the regional corporations, draft models of which are in the Bank's technical files. The corporations will submit the projects for financing under the program to the CU, which will appraise them in accordance with the established criteria (see Annex III-1). Once approved, the projects will be included in the program's annual work plan and the corporations' financial plans. Model DNP/corporation agreements will be submitted to the Bank as a condition precedent to the first disbursement. ^{11/}
- 3.20 Each project will have a technical, environmental, financial and economic feasibility study and a description of its monitoring system. A group of staffers will be formed who will be responsible for the execution of the program projects and will maintain coordination with the DNP.
- 3.21 The corporations would hire the agroforestry technology development and transfer services necessary for management of the microwatersheds from specialized public, private or mixed agencies possessing the required capacity and experience.
- 3.22 For the first year, 12 projects have been identified for which feasibility studies have already been prepared; another 26 are in the prefeasibility stage and could be started in the second year of the program, while a further 18 projects could be financed during years 3 through 5, making a total of 56 projects during the life of the program.
- 3.23 For the execution of the projects the intention is to use the present practices, under which the corporations conclude contracts

^{10/} The following corporations have submitted projects for which feasibility or prefeasibility studies are to hand: CDMB, CORPONOR, CORTOLIMA, CRC, CRQ, CVC and CVS.

^{11/} See proposed resolution.

with producer associations, local boards or individual beneficiaries; these contracts would lay down the reciprocal responsibilities of the parties involved. The corporations would provide technical assistance, some of the inputs and the labor during the establishment stage of the investment; the farmers would contribute at least 75% of the cost of the labor and tools and nonforest inputs. These contracts would also specify the farmers' obligation to repay to the corporations 20% of the value of the forestry production from the first rotation. 12/

b. Restoration of the Santa Marta Wetlands lagoon system

- 3.24 This component would be executed by the Autonomous Regional Corporation of the Magdalena and Sierra Nevada de Santa Marta (CORPAMAG) using specialized contractors with community participation, based on engineering designs and environmental and biological studies that have already been made. In addition to the supervision that would be performed by the CU specialists, expert outside services will be hired for supervision of the engineering works, as set out in technical documents of file in the Bank.

c. Management of Los Nevados National Park

- 3.25 This project will be executed by INDERENA's Parks Division in conjunction with the Caldas Autonomous Regional Development Corporation (CORPOCALDAS).
- 3.26 Once the Ministry of the Environment is established, the INDERENA Parks Division will be transferred to it. Two agreements will be signed, one between INDERENA and the DNP for protection measures in the park and the other between CORPOCALDAS and the DNP for studies and establishment of breeding zoos in the buffer zone. 13/ In addition, the existing agreement between INDERENA and CORPOCALDAS will be used for coordination between the two agencies. These agreements will specify the responsibilities of each party and the work to be performed by them. The CU will perform direct supervision in accordance with the work plans prepared.

d. Guadua promotion

- 3.27 The project for planting and promoting the sustainable use of guadua bamboo will be carried out by the corporations selected for the purpose - Risaralda Autonomous Regional Corporation (CARDER), CORPOCALDAS, CORTOLIMA, CVC and CDMB - under the technical coordination of the Guadua Center operated by CRQ. The field work would be carried out with community involvement, using CRQ methods.

12/ The cofinancing models used for the socioeconomic appraisal are presented in Annex V-2.

13/ See proposed resolution.

Contracts will be concluded between each of the corporations and the DNP setting out the responsibilities of the parties. 14/

2. Subprogram B: Institutional strengthening

a. Strengthening of the program executing agencies

3.28 FONADE will handle the contracting of the different studies and courses, with CU authorization, according to an agreed schedule. Draft terms of reference reviewed by the Bank are to hand for all the proposed consultancy services. The CU will use procedures compatible with the Bank's for contracting and disbursements.

b. Environmental training by ICFES, SENA and the Ministry of Education

3.29 For execution of this component the DNP, through the CU, will conclude agreements with ICFES, SENA and the Ministry of Education as executing agencies. The work will be carried out on the basis of the agreed plans and schedules and will be overseen and monitored by the CU.

(i) Colombian Institute for the Promotion of Higher Education (ICFES)

3.30 To provide environmental training for professionals, a coordinating committee will be set up in ICFES, with participation by the CU, which will coordinate the planning and activities for the subcomponent and will make the decisions regarding selection of the participating universities. In addition, ICFES will set up an interim technical committee to review course content and the eligibility criteria for staff who participate. The final contracting of the universities and the monitoring of publicity for the courses will be done by ICFES.

(ii) National Apprenticeship Service (SENA)

3.31 A central coordinator will be assigned for the component and coordinators will be appointed in the SENA regional offices. The coordinators will ensure that the courses abide by the agreed work plan and schedule. The central coordinator will be in continual communication with the CU and will hold monitoring and adjustment meetings in the event that changes have to be made in the content of the subcomponent and to serve the beneficiaries' needs.

(iii) Ministry of Education

3.32 Execution will be based on the ministry's existing structure through its Pilot Experimental Centers located in each department.

14/ See proposed resolution.

Coordination of the program will be effected through an advisory group of four ministry officers who will provide support services to the different regions during the execution of the program. The CU will hold periodic meetings with this advisory group in order to monitor the program's progress and make any adjustments called for.

3. Subprogram C: Environmental investments

3.33 The Operating Regulations of the subprogram (Annex III-2) describe in detail the form of operation and requirements the projects and applicants must satisfy, the main conditions being as follows:

- a. Type of requesting entities: (i) public territorial entities including departments, municipalities and regional corporations and autonomous public institutions; (ii) INDERENA in the regions where there are no corporations; and (iii) universities and research centers. The Colombian Constitution prohibits the transfer of public funds to the private sector. NGOs and other private groups would be able to participate in the execution of the subprogram in consortia with or as contractors to public entities.
- b. The amounts to be financed can range between US\$20,000 and US\$750,000. In all cases cofinancing and a minimum counterpart of 30% of the cost of the project will be required. The subprogram administration will seek to select projects that will guarantee average cofinancing of 40%.
- c. All projects will be required to have paid supervision funded out of subprogram resources, above and beyond the supervision performed by the respective DNP team.
- d. Allocation of funds to projects would be subject to the project eligibility and prioritization criteria laid down in the subprogram Operating Regulations, based on: (i) their technical, socioeconomic, financial and institutional feasibility; (ii) evidence that the applicant can assume the recurrent, operating and maintenance costs; (iii) evidence of benefits for low-income groups and women, and (iv) direct community participation in the preparation and execution of the project concerned.

3.34 Subprogram C will be executed by the CU, which will assign an administrator full-time to coordinate all the procedures for reception of project proposals, initial review and processing for technical, institutional, financial and economic appraisal. Actual contracting, together with financial administration, will be performed by FONADE, without charging any commission, until such time as the administration function is transferred to the new Ministry of the Environment.

- 3.35 The projects submitted in accordance with the guidelines prepared by the CU will be reviewed by the subprogram administrator to ensure that they meet the criteria laid down in the Operating Regulations, and will then be appraised by the CU specialists. After appraisal they will be submitted to the Executive Committee for its approval (see Annex III-2).
- 3.36 The regional corporations and the CORPES will play a major role in the promotion of the subprogram. Information materials will be distributed that explain the objective and scope of the subprogram, together with data and information to help prospective beneficiaries prepare their financing proposals.

D. Management of the program resources

- 3.37 The program resources will be administered by the DNP, through the CU, which will forward the transfers to the respective executing agencies in accordance with the agreements concluded in each case and the pertinent annual work plans.
- 3.38 In the case of Subprogram A, the microwatershed management and guadua promotion projects will be reviewed as regards their technical, economic and financial feasibility by the CU, which will verify that they meet the eligibility requirements of the program Operating Regulations and will decide whether they are to be financed and included in the program.
- 3.39 Once a microwatershed management or guadua promotion project is approved, an implementing agreement will be concluded between the DNP and the respective corporation. This agreement will set out the parties' obligations as regards amounts of transfers, schedules, etc., and will specify the contributions and obligations of the beneficiaries, the commitment to plan community participation and the involvement of women, the pertinent technical assistance, and the obligations concerning partial recovery of investments.
- 3.40 For Subprogram B the CU will use FONADE as administrator of the funds in order to expedite the contracting of consultancy services for studies and training. FONADE will do the contracting and disburse the funds with prior CU authorization.
- 3.41 The resources of Subprogram C will be administered by FONADE in accordance with the Operating Regulations for that subprogram (Annex III-2).

E. Execution period and disbursement period

- 3.42 The period for execution and disbursement is five years. The annual targets and disbursement schedules for Subprogram A are detailed in the following tables.

SUBPROGRAM A: ANNUAL EXECUTION TARGETS							
COMPONENT	UNIT	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
1. Microwatershed management	ha	4,700	14,646	20,047	15,347	5,660	60,400
Agroforestry systems	ha						4,600
Forest grazing systems	ha						3,260
Protective revegetation	ha						2,910
Reforestation	ha						
Protective-productive forests	ha						24,750
Reforestation for fuelwood	ha						9,000
Guadua reforestation	ha						4,500
Biomechanical works							11,380
2. Restoration of wetlands (Ciénaga Grande)							
Canal rehabilitation	km	25	35	35	27		122
Water control structure	No.		2	2			4
Bridge construction	No.		2	4			6
Mangrove replanting	ha		3,000	3,000	3,000	3,000	12,000
3. Los Nevados National Park Management	ha	44,000	58,300	58,300	58,300	58,300	58,300
4. Guadua promotion	ha	720	720	720	720	720	3,600

PROGRAM DISBURSEMENT SCHEDULE (US\$000 equivalent)						
SOURCE	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
IDB-OC	10,997	11,700	11,414	11,957	11,932	58,000
IDB-FSO	1,578	4,322	7,470	5,898	3,732	23,000
LOCAL	5,916	11,233	14,568	13,005	9,278	54,000
TOTAL	18,491	27,255	33,452	30,860	24,942	135,000
%	13.7	20.2	24.8	22.9	18.4	100.0

F. Procurement of goods and services

3.43 Current Bank procedures will be applied in all procurement of goods and equipment and the hiring of services required in the program. These procedures will be annexed to the loan contract. Prequalification is considered necessary for the international bidding on the Santa Marta Wetlands works because of their complexity. The specifications for the works are included in the technical files on the program.

3.44 The investments in microwatershed management and guadua promotion would be effected through small-scale contracts with the

beneficiary farmers and the hiring of services for technology validation and transfer.

- 3.45 The protection and monitoring works for Los Nevados National Park would be administered by means of incremental personnel to be hired for the purpose with funding from the national counterpart.

G. Recognition of prior expenditures and advance of funds

- 3.46 It is recommended that expenditures on eligible consultancy services subsequent to the application for the financing and within the 18 months preceding approval of same, amounting to US\$200,000, be recognized as part of the local counterpart.

H. Control, monitoring and evaluation

- 3.47 In view of the complexity of the program, various arrangements have been made for monitoring not just of the financial execution of the program and accomplishment of objectives, but also of the results obtained in the programs so as to be able to make any adjustments that may prove necessary as the program progresses. In particular, the executing agency will be required to submit the following reports to the Bank: 15/

- a. An annual report at the end of years 1, 3, 4 and 5 (the latter encompassing the entire program) that will cover:

- (i) accomplishment of the physical and financial targets of the different activities of the three subprograms in relation to the annual plans;
- (ii) findings of the technical monitoring of the Santa Marta Wetlands rehabilitation project and of the micro-watershed projects, and
- (iii) detailed review of the progress of Subprogram C, analyzing the appraisal and selection process concerning projects to be financed, the levels of execution and achievement of goals of projects financed, and a projection of anticipated demand in the different subject areas.

- b. A mid-term evaluation, within 180 days after the end of the second year of disbursements, noting the degree of accomplishment of the program objectives and goals and the measures suggested to remedy any problems encountered, with emphasis on the institutional setup of the program and on execution of Subprogram C, as outlined in the description of

15/ See recommendations regarding contract clauses.

the annual monitoring system which is in the Bank's technical files.

- c. Within 42 months counting from the last disbursement from the financing, an ex post evaluation report on the results of the program, based on the methodology of and in accordance with the guidelines set forth in paragraph 6.01 of Appendix IV.
- 3.48 During the first six months following the entry into effect of the contract, the executing agency will submit to the Bank the variables selected for use and the methodology for gathering information for the monitoring programs and for the ex post evaluation, as agreed with the Colombian authorities. The supervision of the program by the executing agency will be performed by the CU using an information system that facilitates the monitoring work and decision-making concerning execution. 16/
- 3.49 The Bank will monitor the program as follows:
- a. The Bank's Country Office in Colombia will assign the necessary technical personnel to do the monitoring, on the basis of the reports listed above.
 - b. During the program disbursement period, administration and monitoring missions will be sent from Headquarters.
 - c. During the third year of execution the project team will prepare a report for the CMA on the progress of the project, based on the results of the mid-term evaluation and the information provided by the monitoring programs.

I. Maintenance of the works and equipment; management of plantations

- 3.50 The DNP and the executing agencies will undertake in their respective participation agreements to maintain the works, goods and equipment in satisfactory condition. In the case of the Santa Marta Wetlands rehabilitation project, CORPAMAG will be responsible for operation and maintenance of the canals and water-control structures in a manner consistent with the rehabilitation needs of the lagoon and estuarine and mangrove swamp ecosystems. In the microwatershed management and guadua promotion projects, the beneficiary farmers, acting as an organization and also individually, will undertake to protect and maintain the objectives of the projects, plantations, conservation works and other replanted areas against pests, disease, fire and deforestation.

16/ See recommendations regarding contract clauses.

J. Status of program preparation

1. Subprogram A: Renewable natural resource management

a. Microwatershed component

3.51 Technical, economic and financial feasibility studies are to hand for 12 microwatershed projects and prefeasibility studies for 26 subprojects, which would be carried out in the first and second years of execution, respectively; the component has been scaled on the assumption that at least 18 projects would ultimately be eligible for execution out of a minimum additional portfolio of 55 projects with profiles.

3.52 The participating corporations possess installed technical capacity for preparing the feasibility studies for the projects in the identified portfolio.

b. Rehabilitation of the Santa Marta Wetlands

3.53 A technical and economic feasibility study and an environmental assessment of this component are available, together with final designs (at bidding level) and technical specifications and bidding documents. In addition, CORPAMAG has an initial plan for the monitoring of the physical, chemical and biotic indicators of recovery of the mangrove swamp and initial plans for the replanting of 12,000 ha of mangroves. CORPAMAG will have to hire technical personnel to supervise the execution of the project and monitor the parameters indicative of ecological recovery.

c. Los Nevados National Park

3.54 INDERENA and CORPOCALDAS have prepared a feasibility study for the component based on updating of the management plan for the park prepared by a recognized national NGO. Plans are also available for the works to be carried out.

d. Guadua promotion

3.55 The CRQ Guadua Center has prepared a feasibility study for this component, which is based on research performed by the center and data compiled by the corporations from their field work.

2. Subprogram B: Institutional strengthening

3.56 There are presently available studies prepared by ICFES, SENA and the Ministry of Education for the environmental training and education work, together with studies prepared by the DNP for the strengthening of the executing agencies, and also preliminary terms of reference.

3. Subprogram C: Environmental investments

- 3.57 Profiles have been prepared for some 25 possible projects, subject to program financing. Eighteen of these potential projects have been selected for the sample of operations, which have been appraised by the DNP and reviewed from the technical standpoint by the project team. The selection criteria of the subprogram's Operating Regulations were applied in selecting projects for the sample (see Annex II-4).

K. Cofinancing mechanisms, use of incentives and cost recovery

1. Natural resource management subprogram projects

- 3.58 The microwatershed projects have internal rates of return (IRR) above 12% but below 20% in most cases (average of 17% for the sample), which makes them attractive from the standpoint of society as a whole. However, it would be unrealistic to expect the farmers to undertake these projects out of their own pockets, especially bearing in mind that the benefits will not begin to materialize until years 6 to 8, which makes the risk levels high. Moreover, these projects will generate externalities for the communities living in their areas of influence which, while not high (present value estimated at US\$72/ha on average for the sample analyzed), will help to make the projects more attractive.
- 3.59 For these reasons, the financing of the projects has been structured taking into account the farmers' financial capacity and the community's interest in carrying them out. It has been agreed that the corporations, using project funds, would finance the cost of technical assistance and management and the forestry inputs plus 25% of the labor costs during the first three years of the plantations; the rest of the costs would be covered by the farmers. In turn, the farmers would repay a part of this investment to the government by contributing 20% of the value of the forestry output from the first rotation (cycle from sowing to felling).
- 3.60 Taking this financial arrangement into account, the IRR for the farmers would reach an average of about 30%, which renders the projects much more attractive and increases the probability that they will be effectively carried out.
- 3.61 Since the externalities will benefit a significant number of economic operators, each of whom would gain a relatively small amount, it would be costly to seek to recover these by means of project-related tariffs or charges. The present value of the externalities is equivalent to approximately 20% of the total amount the government would be investing, or 65% of the management and technical assistance costs.
- 3.62 The government's recoveries from the forestry output would be equivalent to approximately 50% of the total costs it defrays.

These recoveries would be channeled through the community organizations and would be used by the corporations to expand the coverage of these programs.

- 3.63 The majority of the regional corporations have been receiving funding from a real-estate surtax, which in 1992 brought in a total of US\$9.3 million for the corporations with projects in the sample analyzed (about 70% covered by CVC). The corporation institutional strengthening component includes a study to increase the efficiency of these collections and of other charges such as those levied for use of renewable natural resources.
- 3.64 With regard to the Santa Marta Wetlands recovery project, it is expected that the resources necessary for operation and maintenance of the works can be covered by means of a levy on fishery activity originating in the wetlands. This will be established and collected by INPA pursuant to Law 13 of 1990, and the proceeds will be transferred to CORPAMAG. The amount, method of collection and mechanism for transfer to CORPAMAG will be determined during the first year of the project. 17/

2. Environmental investments subprogram projects

- 3.65 The funding provided for this subprogram will be nonreimbursable, which is why restricted areas of coverage are specified with a view to ensuring that the projects will generate positive public environmental externalities.
- 3.66 Moreover, the subprogram regulations require the regional entities that will execute the projects to contribute an average of 40% of the total cost. This requirement is justified by the desire that the project resources be complementary to the regional funding put in, so as not only to generate a multiplier effect but also to induce a minimum of quality control and supervision by the executing entities.

17/ See recommendations regarding contract clauses.

IV. THE BORROWER AND THE PARTICIPATING AGENCIES

A. The borrower

The borrower will be the Republic of Colombia.

B. Temporary coordinating agency: DNP

- 4.1 The agency assigned to coordinate the program until such time as the Ministry of the Environment is organized will be the DNP. This agency reports to the Office of the President of the Republic and is responsible for formulating the Colombian government's economic and social policy and for preparing appropriation bills under the national budget. The DNP participates in and assigns a representative as secretary to the CONPES and the five CORPES. It is also responsible for preparation of the annual capital budget of the public sector. The DNP's operating budget in 1992 was US\$3 million equivalent.
- 4.2 The DNP is headed by the National Director of Planning, who has a deputy director. It consists of eight units, four special divisions and four regional planning coordination offices. There are also four support divisions under the General Secretariat.
- 4.3 The DNP has already acted as coordinator of national and multi-sector programs, such as the National Food and Nutrition Plan (1977-1984) and the Integrated Rural Development Program (1978-1987). Recently, the DNP has coordinated microenterprise promotion programs (with IDB financing), construction and operation of water and sewer systems (with UNDP technical assistance and World Bank financing) and the TFAPC.
- 4.4 Other offices in the DNP are the Agricultural Development Unit (UDA), the Special Division for Environmental Policy and Corporations (DEPAC), and the General Secretariat, whose functions include provision of support to the CU. A more detailed description of these units is available in the Bank's technical files.

C. Ministry of the Environment as coordinating agency

- 4.5 Responsibilities concerning direction and decision-making in the environmental sphere would be assigned to the new Ministry of the Environment. The proposed structure for its internal organization would aim to cover the following technical areas that would be placed under branches with responsibility for the following:
(a) human environment: urban ecology and environmental education;
(b) physical natural resources: water and watersheds, soil and mines, air and forests; (c) biological resources: flora and fauna;
(d) protected areas: parks, reserves, management of endangered species; (e) land-use planning: zoning, planning and citizen

participation; and (f) assessment and monitoring of environmental quality. The ministry would also incorporate the National Environmental Fund (see Annex IV-1).

- 4.6 The new law would consolidate the environmental stipulations set forth in the 1991 Constitution concerning, among other things, the role of the corporations that would be attached to the ministry and would act as agencies for the management of renewable natural resources and protection of the environment.

D. Executing agencies

1. Regional corporations

a. Legal framework and functions

- 4.7 The autonomous regional corporations are decentralized public bodies attached to the DNP, which were originally created to spur socioeconomic development in their respective regions. Since 1991, their functions have been redirected to focus on management of renewable natural resources and of the environment. Once the law setting up the Ministry of the Environment is approved, they will be attached to the new ministry.

- 4.8 The programs they are currently executing can be divided into the following categories: control and oversight of natural resources, management of watersheds and natural resources, erosion control and pollution control.

b. Administrative and financial structure

- 4.9 The corporations have a common general structure: a board of directors and an executive director appointed by the President of the Republic. The members of the board include representatives of the DNP, departments, municipalities and associations and unions in their areas. The organization includes technical, administrative and financial divisions and work programs.
- 4.10 In general, the number of staff employed by the corporations is small (between 50 and 290), with the exception of CVC which has 2,810 employees. Certain corporations accordingly use contract personnel for their programs and projects. The analysis of the corporations' technical capabilities produced by a consultant engaged by the Bank is in the Bank's technical files.
- 4.11 The corporations keep their books on the accrual basis, with separate accounts by source of income and program. The systems implementation process in the administrative and accounting areas is deficient. In general, the equipment needed for standardized systems is lacking. An institutional strengthening program has accordingly been recommended for each of the 10 corporations participating in the program and consultancy services and training

programs for upgrading their project-executing efficiency have been designed. 18/

c. Financial aspects

- 4.12 In 1992 the corporations' budgets ranged from US\$0.7 million to US\$6.2 million, with the exception of CVC which has a budget of US\$202 million because of its operations in the energy sector. The corporations' chief revenue sources are the real-estate surtax, sale of services (sale of fish fry, seedlings, technical assistance, etc.), forest use charges, water concessions and pollution charges and a share in State mining royalties. In addition, the corporations receive funding from the national budget and in some cases the proceeds of domestic and external borrowings and technical assistance funding. .
- 4.13 The corporations that receive significant levels of funding from the national budget are CORPAMAG, with 70.2% of its total budget because it was recently established, and CRC (76.8%), which was set up for infrastructure reconstruction after the Popayán earthquake. The others received government funding of between 5.4% and 55.8% of their budgets in 1992.
- 4.14 The corporations' main source of income is the proceeds of the real-estate surtax, the collection efficiency of which has ranged from 2% in the case of CORPAMAG to 74% for CORPONOR. Income from royalties on mineral production is an important revenue source for some corporations. A financial analysis of 10 corporations is available in the Bank's technical files.
- 4.15 The bulk of the corporations' resources is used for capital outlays (from 81% to 94% in 1992), with the exception of CRQ (69%) and CVC (36%). The latter is accounted for by the fact that its energy-generation activities by their nature entail higher operating costs than the activities of the other corporations.

d. Technical capabilities .

- 4.16 The corporations' technical capabilities vary: some of them have experience in project execution and complementary activities, while others will require substantial strengthening. The technical and operating capabilities of the corporations that will execute the program are presented in Annex IV-1 and in detailed documents in the Bank's technical files.

18/ The diagnostic study and financial projections relating to the regional corporations are available in the PRA technical files.

e. Actions planned

- 4.17 The diagnostic study made of the corporations identified the technical and administrative and financial position of each. Institutional strengthening measures were then designed and programmed on the basis of this study. This training is not only intended to facilitate the execution of the program projects, but also to strengthen their all-round capabilities.
- 4.18 The Subprogram A projects do not exceed the executing corporations' capacities. Prior to the execution of any additional new project, the CU will ensure, by applying the eligibility criteria and taking the planned strengthening into account, that the corporations have adequate capacity. This approach has also been applied for the case of CORPAMAG which, although it is the smallest of the corporations involved in the program, will execute one of the largest projects (restoration of the Santa Marta Wetlands).

2. Other participating agencies

a. Colombian Institute for the Promotion of Higher Education (ICFES)

- 4.19 ICFES is a national public establishment attached to the Ministry of Education and responsible for functions connected with higher education. Its main objective is to collaborate with the universities in developing their general policies and to strengthen them with a view to improving their academic quality. The ICFES board is made up of the Minister of Education, who is its chairman, the head of the DNP, representatives of the universities and a representative of the President of the Republic. The institute has a budget of US\$12.5 million and a staff complement of 350.
- 4.20 ICFES is currently executing various IDB-financed programs, including development of research capacity, of postgraduate education, and of higher education. With its knowledge and experience, ICFES is well placed to handle the selection and supervision of the various executing agencies for the component.

b. Financial Fund for Development Projects (FONADE)

- 4.21 FONADE is a state industrial and commercial enterprise of a financial nature associated with the DNP. It has juridical personality, separate assets and capital, and administrative autonomy. Its main objectives are the financing and management of studies and preparation of development projects. The FONADE board is made up of the director and deputy director of the DNP and the manager of FONADE. FONADE is subject to the supervision and control requirements of the Superintendency of Banks.
- 4.22 FONADE has a staff of 77, the majority of whom are professionals, and capital of US\$32.1 million and a portfolio of US\$15.7 million.

It operates three funds: Preinvestment, Nonreimbursable and Administration. Its main sources of funding are transfers from the national budget, loan repayments, and interest and commissions from its lending operations. In addition, FONADE generates relatively high revenues from its financial investments.

- 4.23 FONADE administers some 240 consulting contracts per year, the majority of which relate to DNP operations. No problems are anticipated in handling the additional volume from Subprograms B and C under the present FONADE structure.

c. National Apprenticeship Service (SENA)

- 4.24 SENA is a public agency with juridical personality, separate capital and assets, and administrative autonomy. It is attached to the Ministry of Labor and is responsible for technical and vocational training of the country's human resources. SENA's national board, the agency's supreme authority, includes representatives of the government, employers, workers from different sectors (agriculture, industry, trade and services) and also the Conference of Catholic Bishops. SENA has 20 regional offices for the performance of its training functions in a decentralized fashion.
- 4.25 SENA is funded by means of a 2% levy on the payrolls of private employers, ½% from State industrial and commercial enterprises and mixed companies, and transfers from other entities. Its 1993 budget is US\$195.7 million equivalent. It has 9,814 employees, 4,239 of whom are instructors, 70% of them full-time.

d. Ministry of Education

- 4.26 The ministry's organization is made up of the executive, advisory, implementation and control units. At department level the ministry operates the pilot experimental centers and the Regional Education Funds (REFs). The REFs are responsible for managing the resources allocated for the upkeep and expansion of education services in the official establishments for elementary, secondary and intermediate education.
- 4.27 Environmental education programs have focused primarily on the agriculture and social promotion spheres. They are specialized in developing techniques that will raise performance in agricultural work and improve the quality of rural schools by means of pedagogic and technical assistance.

V. FEASIBILITY OF THE PROGRAM

A. Technical feasibility

1. Subprogram A: Renewable natural resource management

- 5.1 Subprogram A is considered to be technically feasible for the reasons set forth below.
- 5.2 The steps that would be taken in implementation of the microwatershed management component are based on technologies that have been validated and proven in the country, and in regions ecologically and socioeconomically similar to those considered in the program. In this connection, seven management modalities or practices have been designed that represent in each case the best use of the land in terms of: (a) its potential; (b) the technological capacity possessed or that will be possessed by the beneficiaries; and (c) meeting of the objective of substantially reducing surface runoff, increasing infiltration and lessening sheet erosion of the soil. In brief, the object is to halt the degradation processes that cause loss of fertility, compaction, reduced water-retention capacity and, consequently, lower productivity.
- 5.3 These technologies, like those designed for the guadua promotion component, are relatively simple to apply and can be used both by the beneficiary farmers and their associations and by the corporations involved. In the case of Los Nevados park, monitoring and protection measures are to be instituted and studies carried out that are based on the existing management plan for the park and techniques that are known in the country. It is considered that the technical solutions envisaged in these components of the subprogram can be adopted in subsequent stages of it or in other initiatives that may be undertaken at the same time.
- 5.4 The lack of capital, limited technical assistance and, in general, the paucity of initiatives to assist small farmers lead to extractive and inappropriate use of resources and to their degradation. The design of the measures envisaged in the subprogram takes into account these deficiencies and supplies the necessary elements to correct them.
- 5.5 The technical feasibility of the Santa Marta Wetlands rehabilitation component has been proven by means of a thorough feasibility study, backed by: (a) positive experimental data on mangrove restoration in small areas within the actual project boundaries; and (b) the analysis of the climatic and biotic factors influencing the productivity of the wetlands and similar tropical estuarine environments elsewhere in the world.

- 5.6 In addition, during execution a system of monitoring essential parameters and indicators will be set up, the data from which will provide the technical feedback necessary for adjusting and fine-tuning the execution of the project.

2. Subprogram B: Institutional strengthening

- 5.7 Subprogram B is soundly planned and appropriate for remedying institutional weaknesses in the environmental sector. The CU will have the necessary personnel for coordinating the component and ensuring consistency in its execution. International and national capacity is available for execution of all the studies and courses envisaged.
- 5.8 In the case of the courses it is important to ensure the participation of a representative group that will benefit most from and transfer know-how to others. The participants in the courses should represent various levels of the public sector and also community organizations and NGOs.
- 5.9 The greatest risk associated with this subprogram is the uncertainty about the establishment of the Ministry of the Environment. The sector's institutional capacity will be improved with the strengthening programs planned, but without the new ministry the sector will remain very weak and fragmented at national level. Execution of the program is not subordinated to establishment of the ministry, but achievement of certain of its objectives will depend on measures to enhance the present institutional setup.

3. Subprogram C. Environmental investments

- 5.10 The proposed subprogram is complex because of the institutional setting in which it is to be implemented (at least in the initial stage) and also on account of the diversity of subject matters, areas, amounts, types of beneficiaries and number of operations to be covered. Its feasibility will depend on various factors:
- a. The clarity and permanence of the environmental policy that would be implemented through this subprogram.
 - b. The capacity of the subprogram's executive committee to appraise in an objective fashion individual requests received and their possible contribution to the application of the country's environmental policy under the priorities laid down in the subprogram's Operating Regulations.
 - c. The technical and administrative capacity available, both during the transition period and once the program is transferred to the Ministry of the Environment.
 - d. The technical and scientific quality of the appraisal work performed (by the executing agency with consultant support),

with a view to ensuring that the appraisals produced are impartial, accurate and specific.

- e. The contributions made by the appraisals with regard to the structure and technical bases of the subprogram projects.
 - f. The institutional support provided by the executing agency to the less experienced applicants.
 - g. The subprogram's sensitivity to possible changes in environmental problems and demand patterns, with a view to utilizing new opportunities and introducing changes in the project packages in the course of the execution of the subprogram.
- 5.11 The sample submitted for consideration by the Bank (18 projects) covers the seven categories eligible for financing as specified in the subprogram Operating Regulations, with the exception of disaster prevention. In addition, the objectives, scope and technical features of this sample are consistent with the requirements detailed in the Operating Regulations. Eleven of them have passed an initial appraisal by the DNP and the other seven have been reviewed by the Bank.

B. Environmental impact of the program

1. Studies completed

- 5.12 The Bank's Environmental Committee (CMA) has classified the program in Category I since the operation is intended and specifically designed to improve the environment. The environmental summary submitted to the CMA on May 25, 1993, was based on an environmental impact assessment of the different subprograms. This summary paid special attention to the ecological impacts of the investments envisaged in restoration of the Santa Marta Wetlands lagoon system. The findings of some 43 studies on management of hydrobiological resources in the wetlands zone were used for assessing these impacts. In addition, the Bank hired a consultant specializing in the ecology of estuarine and mangrove swamp environments to assess the impact of the project design on restoration of the wetland mangrove forests in light of the degradation and recovery projections (see Annex V-1).

2. Environmental impacts: mitigation and monitoring

- 5.13 The program would have significant positive environmental impacts on the recovery of soil, water, fauna and flora resources through the steps included in Subprogram A for microwatershed management, guadua promotion, restoration of the Santa Marta Wetlands ecosystem and management of Los Nevados National Park. All these investments have been designed specifically to improve the quality of the environment and would have impacts such as: (a) reduction of erosion and sedimentation; (b) improvement of water regulation;

(c) favorable changes in the productivity of soil and of hydro-biological resources; (d) protection of biodiversity; (e) increase in plant cover; (f) biomass generation; and (g) fixation of carbon dioxide from the atmosphere.

- 5.14 Subprogram B has been set up for strengthening of the institutions involved by means of consultancy services for studies, training and environmental education and to implement specific measures to foster efficient execution of the program actions. Subprogram C, designed specifically to finance investments for improvement of the environment, uses selection criteria for projects and participating entities that have been included in its Operating Regulations in order to ensure that the operations financed meet their objectives efficiently.
- 5.15 Annex V-1 presents an analysis of possible negative environmental impacts the program might have and measures to control and mitigate them. These measures have been built into the design of the different components and into the selection and appraisal criteria for the investments, and they are to be submitted in the annual work plans and reports. The program will be subject to close environmental monitoring by the regional corporations and other entities responsible for its execution. Supervision will also be exercised by the CU and by consultants hired to make annual and mid-term evaluations, especially with regard to the microwatershed and Santa Marta Wetlands restoration projects (see chapter III, section H).
- 5.16 At the beginning of the second year of execution, the project team will prepare an evaluation for the CMA on the efficiency of the institutional execution mechanism and any needs for strengthening of the Country Office in Bogota for supervision of the program investments, and to propose any other actions required to improve execution of the program.

C. Institutional feasibility

- 5.17 The CU will be appropriately organized and structured to satisfactorily perform the functions necessary for execution of the program. In addition, in the initial stage of execution it will receive support from the DNP units (UDA and DEPAC) and will further be able to draw on the cooperation and experience of the TFAPC secretariat. The CU will have the functional and financial autonomy necessary for flexibility in the performance of its activities.
- 5.18 The executing agencies for Subprograms A and B are specialized in the fields and types of activities in which they will participate. Agreements will be concluded with the DNP that will spell out the responsibilities and activities of each party with a view to expediting work and ensuring effective supervision by the CU.

- 5.19 FONADE possesses adequate experience to handle the contracting of consultancy services for Subprogram B efficiently and also the administration of Subprogram C. FONADE has been performing similar functions for the DNP for some time.
- 5.20 The diagnostic study of the corporations has identified certain technical and administrative weaknesses as noted in the preceding chapter. A substantial training and strengthening component has accordingly been designed, together with arrangements for training staff of municipalities and other agencies involved in the Subprogram A projects.
- 5.21 The CU has been structured in such a way that it can easily be transferred to the Ministry of the Environment when the ministry is established, since the unit is not part of the DNP's general structure but is a special and independent unit under the authority of the deputy director of the department. Provision has also been made for institutional strengthening for the new ministry by means of consultancy and technical advisory services, which will facilitate the implementation of the program once the CU has been transferred to the ministry.

D. Financial feasibility

- 5.22 The necessary counterpart for the execution of the program would be contributed by the government and the communities. The government's contribution will be transferred to each of the executing agencies through the DNP. The programming of the projects by the corporations includes budget allocation for each project programmed through the existing DNP mechanism. This will ensure that the projects to be carried out will have the necessary funding.
- 5.23 In the case of the other executing agencies the funds will be transferred from the DNP through agreements. The resources needed for the children's environmental education program would have to be included in the Ministry of Education budget for each year of execution of the program.
- 5.24 Subprogram B includes additional strengthening for the corporations in the form of consultancy services concerning revenue collection by means of fees and charges, royalties, etc., which would serve to enhance its future liquidity position.

E. Economic appraisal

- 5.25 The economic appraisal was centered on a sample of projects from Subprograms A and C. In Subprogram A, 12 microwatershed projects, the Santa Marta Wetlands project and the guadua promotion project were analyzed. In the case of Subprogram C, a total of 18 projects were analyzed that were considered a sample of the projects that would be financed by the environmental fund using the loan

proceeds. The main findings of these appraisals are set out below (see Annex V-2).

1. Renewable natural resource management subprogram

a. Microwatershed management projects

- 5.26 The sample analyzed (12 projects) was selected from among a group of 26 projects currently at prefeasibility or detailed profile level and which were prepared in the context of the TFAPC. The economic analysis took into account both the increases in production that would ensue in the areas to be reforested and/or restored, and also the off-farm benefits, referred to as "positive project externalities".
- 5.27 To set a value on the externalities this type of project would generate, the changes expected in the hydrologic response and in sediment production as a result of the changes in plant cover were first estimated.
- 5.28 The changes in sediment production were estimated by means of the universal soil loss equation (USLE). Taking data from various regional erosion studies and utilizing information on precipitation, soils, topography and plant cover supplied by the Instituto Geográfico Agustín Codazzi and the respective corporations, the erosion rates were estimated for 20 sites in each microwatershed of the sample used in this study, for the project situations.
- 5.29 The changes in hydrologic response (mean, maximum and minimum flows) were estimated with a statistical model calibrated by means of cross-section data for 56 microwatersheds smaller than 500 km² and hydrologic records going back at least 10 years, located in various parts of the country.
- 5.30 The increases in minimum flows were valued on the assumption that they would produce increases in the water volumes consumed during the summer periods (60 days/year) in the municipal, village and individual water systems directly benefited. To estimate the value of one cubic meter of water consumed in the communities concerned, a statistical model developed by the DNP project bank for appraising water-supply projects for small communities was used. Since the model is strictly applicable to communities larger than those covered by local systems, the results of the model were used to estimate the value per cubic meter of water consumed (US\$0.50/m³), which was then applied to the incremental volumes. It was assumed that the benefits per hectare would be obtained as of year 7, and that between year 3 and that year there would be a linear increase in benefits.
- 5.31 To assign a value to reductions in sediment volumes, information was obtained on the cost of chemicals (basically alum) and clearing costs of intakes and tanks for the municipal and village water

systems concerned, and it was assumed that the reduction in these costs would be proportional to the reduction in the total volume of sediments produced in each microwatershed.

- 5.32 The average value of the externalities induced by one reforested hectare would be of the order of Col\$11,500, currently equivalent to US\$16.50, applicable as of year 7. The present value at 12% of these externalities for one typical hectare would be of the order of Col\$56,500 or US\$80/ha.
- 5.33 The values of the externalities were used together with the productive costs and benefits plus the cost of technical assistance to obtain the return on each of the sample projects. The project rate of return was calculated as a whole and from the standpoint of the farmers, while also computing the present values of the costs incurred by the government and the amounts it is hoped to recover.
- 5.34 In the appraisal it was assumed that the areas which would be covered by the program are currently only used for extensive ranching with a low return. It was assumed that the areas where biomechanical works were planned would remain unused in the "without project" scenario.
- 5.35 The 12 projects present a combination of seven types of activities to be taken up by the farmers. The purpose of each of these activities is to protect the soil while at the same time generating income for the farmer, but with different combinations of short- and medium-term income and with different investment requirements. In turn, certain activities are proposed to respond to specific problems, while others will not be possible when the soil is seriously degraded.
- 5.36 The design of the projects was not the outcome of an explicit exercise aimed at maximizing farmer incomes over the long term taking into account the universe of possible activities. The combinations proposed are rather the fruit of regional experience with projects of a similar nature. It is to be hoped that with the experience gained from this project, coupled with a good exchange of information between the corporations, reliable information will be available in the future that will make it possible to select technological proposals following explicit optimization procedures.
- 5.37 The 12 projects analyzed provided data on costs and yields of the proposed systems and were thoroughly reviewed by the DNP and the consultants who made the feasibility study. It was assumed in the appraisal that the projects would be executed in five years, but in actual fact it is likely that in the majority of them the total area can be incorporated into the project in a shorter period, probably about three years.

- 5.38 According to the findings shown in Annex V-2, of the 12 projects studied only one would have an IRR of less than 12% (Rio Piedras-CVC). It is not therefore thought that availability of projects with an economic return will be a problem; in addition, a large number of projects have been prepared to prefeasibility level as a result of the TFAPC's work. The average IRR of the 12 projects studied was 17.1%.
- 5.39 The projects would be more attractive to farmers than to society as a whole. The average IRR for farmers would be of the order of 30%, and on average the government would be transferring Col\$210,000/ha (US\$300/ha) in present value. In terms of transfer per hectare, only the projects of the CDMB show figures above Col\$300,000/ha, which is due to the amounts transferred for agroforestry and forest grazing systems. By way of reference, it can be mentioned that the Forestry Incentive Certificate (FIC) that the government has submitted to Congress for approval would make it possible to transfer some 70% of the planting costs and 50% of the maintenance costs during the first five years, which is approximately equivalent to Col\$350,000/ha (US\$500/ha). Should the FIC bill that is currently under study be passed and should this law adopt measures that could result in substantial differences in terms of incentive levels for Subprogram A beneficiaries, the borrower will be required to agree with the Bank on such steps as may be needed to regulate the use of the FIC in a manner that is in harmony with the execution of the subprogram. 19/
- 5.40 The present value of the externalities for the 12 projects would be Col\$702 million (US\$1 million), which represents an average per hectare of Col\$50,259 (US\$72). The present value of the externalities would be equivalent to approximately 20% of the present value of the project costs covered by the government, which is certainly a significant percentage. This value ought in fact to be higher since because of the lack of information it was assumed in all cases that there would be actual demand for the additional volumes of water in the summer periods.
- 5.41 Considering 20% of the value of production for the first rotation of the plantations and adding in the value of the externalities, society as a whole would be recovering approximately 73% of the amounts invested in the project, so that the net transfer to farmers would be Col\$60,000/ha (US\$81/ha). This percentage will be heavily dependent on the share in the value of production obtained, as will be specified in the contracts to be signed with farmer associations. If this share is completely eliminated, a net transfer (present value of costs covered by government less present value of externalities) of the order of US\$160,000/ha (US\$228/ha) would be obtained.

19/ See recommendations regarding contract clauses.

- 5.42 To ensure efficient use of the financial resources, the CU will have to analyze the proposals made by the corporations and verify that the projects have IRRs of over 12% for each project as a whole. The CU will have to ensure that the projects financed together represent an initial government transfer (for example, costs covered during the first three years before deducting the share of production) of US\$400/ha on average as a maximum for plantations and US\$200/ha for biomechanical works.

b. Santa Marta Wetlands restoration component

- 5.43 The Santa Marta Wetlands was traditionally an important source of fish for northern Colombia (it is near the cities of Barranquilla, Santa Marta and Ciénaga), providing some 8,000 tons in 1972, which figure fell to 1,800 tons in 1989. The fishery productivity of the marsh depends on the state and total area of the bordering mangrove areas. The total area of mangroves has been declining as a result of the increased salinity of the wetlands due to less fresh water being brought in from the Magdalena River. This area fell from some 510 km² in 1956 to 300 km² in 1987.
- 5.44 Although the wetlands area has been the subject of numerous studies and the Punta Betín marine research center has devoted a good part of its work to the subject, the complexity of the interrelationships between hydraulic problems (for instance the behavior of the canals and system of lagoons and small marshes on the left bank, and changes in salinity of the water and soil once the canals are brought into operation) and those of a biological nature (for example, the responses of the mangroves and of the fish populations that form the biotic system) make it difficult to predict the impact of the project with certainty. The size of the hydraulic works to be constructed depends to a large extent on the salinity levels that it is desired to maintain and the time that these levels will be permitted to remain at the maximum and minimum limits. The designs adopted were the fruit of extensive discussions on this point and it is thought possible that the monitoring program will indicate that additional canals over and above those envisaged in the project will have to be opened to improve salinity level management. The fact is that in light of the uncertainty it is reasonable to assume a conservative attitude as regards investments and to make adjustments as further information is obtained on the system's response.
- 5.45 For the purposes of the appraisal it was assumed that the main project impact would be the increases in fish catches in the wetlands, taking as nil the impact on species that enter the area to feed and are then caught at sea. It was assumed that increases in productivity would be slightly less than the marginal productivity of the mangrove areas that disappeared between 1972 and 1980, and a value of 0.5 ton/ha was adopted. It was also assumed that the areas of mangrove restored (670 ha/year) and planted (12,000 ha) would reach this level of productivity in eight years.

In actual fact, productivity does not depend solely on the areas of mangroves; these are a reflection of the conditions in the marsh and, therefore, the recovery of the mangroves not only implies that more food will be generated for fish populations but also that the general conditions in the marsh will be more conducive to fish production. The value of the fish was estimated on the basis of buying prices in nearby markets, less the estimated fishing effort, giving a value of US\$1,160/ton.

- 5.46 The results of the appraisal are presented in Table 5-3 of Annex V-2. For the conditions assumed, an IRR of 25.6% with a net present value of US\$17.9 million is obtained. The IRR remains above 12% even with a 60% reduction in the price for the fish or in the assumed productivity of the mangrove areas to be restored or replanted, provided in the latter case a linear growth rate is still assumed for eight years.

c. Guadua promotion project

- 5.47 In view of guadua bamboo's high productivity and the return that can be obtained from it, the project will do promotion and technical assistance work and provide the planting stock, which is the chief input needed. The technology package recommended does not include fertilizer use since in most cases the planting will be done along river banks.
- 5.48 Table 5-4 of Annex V-2 presents the results of the appraisal of the project as a whole, together with estimates of return for farmers. Although the project will be executed in eight regions of the country, it was assumed for appraisal purposes that the yields would be equal, since the soil and climate conditions in the areas to be selected would be roughly the same.
- 5.49 The project as a whole shows an IRR of 28.7%, with a net present value of Col\$3.401 billion (US\$4.8 million). The project IRR is over 12%, even if the price for length of guadua is cut by some 70%. After deducting the cost of technical assistance, management and planting stock, the IRR of the investments for farmers would be 39%, which should make the project very attractive to them. The present value of the costs incurred by the government would be Col\$154,000/ha (US\$220/ha), which is lower than the average figure for the investments in microwatershed management projects. The actual value will depend to a large extent on the effectiveness of the publicity programs, which is hard to predict since the project is only now getting under way.

2. Environmental investments subprogram

- 5.50 For the appraisal of the operation a sample of projects was taken and the procedures that the fund is expected to use for approving financing were followed. Of the projects selected, only the one for conservation of the Córdoba wetlands was subjected to a

conventional economic appraisal; the others were submitted to panels of experts to seek their opinion as to the relevance, quality and suitability of the working methodologies, and also as regards the cost and work program. These experts recommended adjustments in various of the projects assessed by the DNP, and these were taken into account in estimating the amounts of financing that the fund would provide.

- 5.51 The DNP together with the NGOs and the corporations prepared a total of 26 projects over the past year. The sample includes projects in all categories eligible for financing except for disaster prevention. The average total cost per project (US\$1 million) is above the average expected during the execution of the program, which is logical if it is borne in mind that the preparation cost is somewhat higher for small projects so that these tend not to be prepared until there is more certainty that financing will be forthcoming. Furthermore, the amounts applied for would entail average counterparts from the executing agencies close to the level recommended for the program.
- 5.52 Examination of the sample also reveals that while all the projects involve the environment and in all cases can be expected to yield largely "public" benefits, they are clearly extremely very diverse in nature and this diversity will most probably continue to be a feature throughout the execution of the program. This characteristic means that strict application of the project study and appraisal procedures will be very important in order to ensure that all projects are treated equally to the extent possible.
- 5.53 It will be a requirement that all projects must be appraised before they are submitted for consideration by the fund authorities, while the executing agencies will further be required to guarantee the operation and maintenance of their projects and to make counterpart contributions toward their execution, which could average around 40% of the total cost. Depending on the projects' characteristics (sphere of action and size), one of three types of appraisal will be required: (a) conventional economic appraisal; (b) cost-effectiveness analysis; or (c) assessment by a panel of experts. The detailed procedures for these appraisals were devised during the studies and have been formally adopted by the DNP's project bank.

3. Distributional analysis

- 5.54 Data are available for 12 model farms for the CDMB's Oro Alto and Vetás Medio microwatershed management projects, which can be used to estimate average household income. The findings indicate that farms smaller than 50 ha in the case of Vetás Medio and 20 ha in the case of Oro Alto have per capita incomes below Col\$597,000 a year, which is the threshold used by the Bank for defining low income. If per-hectare incomes by type of crop are assumed to be more or less the same for the different farm sizes, it can be

estimated that farmers in the low-income category would receive over 60% of the benefits from the Vetaz Medio project and over 69% from the Oro Alto project.

- 5.55 Since priority was given to low-income areas in the preparation of the TFAPC project pipeline, and this criterion will continue to be applied in the selection of microwatershed projects for Subprogram A (natural resources management), it is considered that the majority of these projects that will be carried out will generate a benefit distribution similar to that observed in the two projects mentioned above.
- 5.56 In the case of the investments to restore the Santa Marta Wetlands, it would be possible in principle to estimate how benefits would be distributed, but unfortunately the executing agency did not obtain the information needed for reliable quantification of these benefits. Nevertheless, it can be posited that the bulk of the benefits would accrue to local fishermen and merchants who very possibly are living below the country's poverty line (Col\$597,000 for 1992), assuming two conditions: (i) that there are no major distortions in the market for fishery products in the area, and (ii) that increases in output will be low relative to volumes of fish products marketed in the area. This second condition is expected to hold true, since the increase in fishery products available in the cities of Barranquilla, Santa Marta, Cartagena, Ciénaga, and others in the area would be about 12% relative to current averages. Moreover, there appear to be no major distortions in the structure of the market, inasmuch as there are many buying points and relatively well developed distribution channels.
- 5.57 Subprogram B (institutional strengthening) calls for investments for studies and training courses and the procurement of computer equipment. It is very difficult to estimate the benefits of outlays of this type, and because they were not calculated in the appraisal, it is not possible to estimate their distribution. As a first approximation it could be assumed that these benefits will accrue to the entire population of the country. An estimate of the distributional impact of Subprogram C (environmental investments) is problematic for two reasons: (i) it is impossible to predict beforehand which projects will be financed, and (ii) given the nature of environmental investment projects, it is not practicable to quantify benefits in monetary terms for a large number of projects that could be eligible for financing.

F. Social impact: community participation and involvement of women

1. Social viability

- 5.58 The proposed program is based on a policy aimed at mitigating the harmful effects of the present environmental degradation and finding means of generating positive environmental impacts. In

this context, provision of sustainable economic opportunities for the population through rehabilitation of deteriorated ecosystems and promotion of broad-ranging social participation in resolving the country's environmental problems have been defined as social objectives of the program.

- 5.59 The program has been prepared in accordance with the Bank's guidelines on sociocultural considerations having to do with the environment, recognizing the relationship that exists between the populations affected by the program who have traditionally lived in natural environments and the role of human groups in the different ecosystems.
- 5.60 The Operating Regulations for Subprograms A and B and the regulations for Subprogram C set out criteria and procedures for ensuring the social viability of the program.
- 5.61 The Operating Regulations specify that effective community participation is fundamental for the program projects and activities. Among the Subprogram A project selection criteria, preference will be given to microwatersheds that supply village and municipal water systems, irrigation districts and hydroelectric projects, or whose output generates significant positive social impacts.
- 5.62 The prioritization criteria for the environmental investments subprogram projects include: (a) benefits for low-income groups; (b) direct benefits for women; and (c) direct community participation in the preparation and execution of the project.

2. Participation of women

- 5.63 Although the different components of the program affect the entire population of the area of influence in a similar way, certain components will have a more significant impact for women, given their preponderant role in determining household strategies concerning health and education, management of the family budget and generation of the resources necessary for survival, particularly in the case of the lowest income groups.
- 5.64 To promote women's participation in the program, the Bank engaged specific consultancy services that were provided through a Colombian NGO. The consultant's findings have been incorporated into the design, including publicity and training measures, project selection criteria for Subprogram C aimed at promoting women's participation, and the hiring of a female officer with relevant experience for the CU (see Annex II-3).
- 5.65 In accordance with the environmental objectives proposed for the program, these moves would have a positive impact on improving the quality of life for low-income women, primarily in rural areas and small towns.

- 5.66 Moreover, it is expected that technical training, education and receipt of direct benefits from the program will help women adopt environmentally desirable practices in the management and utilization of natural resources.
- 5.67 To accomplish these effects, publicity measures are proposed together with inclusion of a package of projects with a high degree of female participation, which will directly meet the program's objectives and can be financed through the environmental investments subprogram.
- 5.68 Regarding efficiency, responsibility and results, high-level advisors specializing in women's issues and the environment will be hired for the CU and the team of consultants responsible for making the annual and mid-term evaluations, in order to stimulate, promote, plan and perform monitoring and evaluation.

G. Natural disasters

- 5.69 In accordance with the Bank's policy on natural disasters, the design of the program takes such risks into account, basically: (a) earthquakes; and (b) damage caused by torrents and flooding.
- 5.70 The works being considered for the program are for the most part very simple structures. Nevertheless, the design of the buildings takes the earthquake risk into account, in accordance with the Colombian building code. Part of the investments in Los Nevados National Park derive from the need to restore areas hit by the Nevado del Ruiz volcano eruption. The siting of the structures takes into consideration the risks of possible mudslides and flooding in the event of eruptions.
- 5.71 The investments in biomechanical soil conservation works and revegetation along watercourses in the microwatershed management projects and the guadua promotion project have been designed with the aim of preventing disasters due to catastrophic torrents or flooding. The design criteria for the Santa Marta Wetlands rehabilitation works provide for protection of canals and associated hydraulic structures against flooding of the Magdalena River.
- 5.72 The investments included in Subprogram B for institutional strengthening include studies on monitoring and control of natural resources, for instance control of natural forest fires and of those caused by human agency, together with water regulation to prevent damage due to flooding, among other things.

H. Program risks

1. Technical and environmental considerations

- 5.73 Two key factors for the success of the program are: (a) the time needed by the regional corporations to prepare and set in motion the microwatershed management projects, and (b) the rate of adoption of new technologies by the beneficiary farmers, which is necessarily slow in the initial stages. To take this risk factor into account, feasibility studies (12 projects) and prefeasibility studies and detailed profiles (26 projects) have been prepared and additional selected projects have been identified (88 projects in the portfolio). In addition, the possibility is being offered for entities other than the corporations that would initially execute the Subprogram A investments to also submit project proposals, subject to project selection and agency eligibility criteria set forth in the program Operating Regulations.
- 5.74 Regarding the second risk, the program would finance the hiring of technology transfer services. In addition, Subprogram B would include training for extension workers and professionals in the validation and transfer of technology.
- 5.75 In the Santa Marta Wetlands, selection of sites with an adequate water salinity balance is crucial for the establishment of mangrove forests. Inflow of fresh water through the canals to be opened into these restoration areas must be assured. Water salinity in the marsh would be carefully monitored, to assure proper recovery of the hydrobiological resources and successful replanting of the mangroves.
- 5.76 In Subprogram C, successful execution will depend on strict application of the technical and environmental selection criteria for projects and participating entities. An executive committee will accordingly be set up whose function will be to approve projects submitted, on the basis of these criteria. This committee will be made up of representatives of the government agencies involved, and also of the scientific community and environmental NGOs.

2. Institutional considerations

- 5.77 Smooth execution of the program will depend greatly on the efficiency with which the CU operates in the DNP and the orderly transition to the Ministry of the Environment. The CU must have sufficient freedom of action and a high enough ranking for it to be able to execute the investments envisaged efficiently. The way the unit has been set up, execution of the program will still be possible even if the new ministry is not established during the program implementation period. The total financing that would depend on establishment of the ministry is estimated at US\$2.3 million.

- 5.78 It is important that the CU's transfer to the new ministry be properly coordinated, with all of the records and, to the extent possible, all staff being transferred. To ensure continuity of the program, the intention is that the CU personnel should remain under contract to the DNP for a period of one year from the transition. A special strengthening component has also been designed for the ministry. Execution of the program would be able to proceed even if the Ministry of the Environment were not set up, but the management of the country's environmental affairs would suffer and it would be harder to achieve the program's objectives.
- 5.79 During the appraisal of the operation, weaknesses were observed in certain of the corporations that would execute program investments. Strengthening is planned for each of these corporations, based on individual diagnoses, in the form of training, studies and computer equipment.
- 5.80 Another risk would be possible interruptions in the execution of education and training activities due to institutional changes stemming from decentralization of the Ministry of Education and SENA. New laws are being readied for both institutions that would give greater interdependence to their regional entities. It is accordingly important that the CU be kept informed of these developments and notify the Bank as soon as possible, putting forward adjusted execution mechanisms for review and approval by the Bank.

3. Recovery of investment outlays

a. Subprogram A: Renewable natural resource management

- 5.81 Significant recovery (50% of the production costs to be covered by the government) is planned in the microwatershed management projects, and would be used to fund similar projects in the regional corporations' areas. Although Colombia has experience with reforestation projects requiring investment recovery (e.g. INDERENA's Integral Watershed Program), this has been primarily with projects carried out by communities and not individual farmers, as is envisaged in the program under consideration here. This risk will hinge to a large extent on the motivation and structural features of the community organizations in the period prior to and during execution of the projects concerned.
- 5.82 The contracts that would be concluded would specify that the communities would give the resources to the farmers and the corporations would pay the communities once it is certified that the planting work has been done. Subsequently, the farmers would pay the organizations and these would pay the corporations, which should appreciably reduce the supervision work. For presentation of projects it will be required that the community work be soundly planned and operating arrangements with community organizations be

capably instituted and strengthened, to ensure that the program is properly implemented and investments are recovered as envisaged.

- 5.83 The Santa Marta Wetlands restoration project includes provision for collecting the funds needed to cover the operating and maintenance costs of the works. Since there are uncertainties regarding the biological response of the system and the incremental volumes of catches, and the mechanism of the levy on fishery activity has not previously been applied, there is a possibility that revenues may not be sufficient to cover initial maintenance costs. In such an event, the levy could be increased to cover the maintenance cost. 20/

b. Subprogram C: Environmental investments

- 5.84 The resources allocated to this subprogram are nonreimbursable; however, it is stipulated that on average the regional corporations are to contribute some 40% of the total cost of the projects. Since the resources will be nonreimbursable, a heavy demand is expected. To ensure that only projects meeting the subprogram's objectives are financed, the administration will have to apply project selection, appraisal and supervision procedures that will guarantee that the investments are in line with the fund's objectives and are effected as planned.
- 5.85 At the same time, the fact that the fund will require a local contribution to the regional entities and will make them responsible for the operating and maintenance costs of the projects will induce these entities to supervise project execution and require efficiency in project design.

4. Risks of social conflict

- 5.86 Although areas with guerrilla activity or problems with law and order have been avoided in selecting areas for the program investments, it is possible that problems of this sort might occur in some areas. This aspect is to be taken into account in the selection of microwatershed projects and those included in the environmental investments subprogram, so as to avert difficulties that would affect the execution of the program.

I. Recommendation

- 5.87 Based on the analysis of all the components of the program, the project team recommends that it be approved for partial financing by the Bank.

20/ See recommendations regarding contract clauses.

SUBPROGRAM B. INSTITUTIONAL STRENGTHENING.
CONSULTANCIES AND TRAINING

1. STRENGTHENING OF REGIONAL CORPORATIONS
SUMMARY OF COSTS OF THE STRENGTHENING COMPONENT
(US\$ thousands)

ACTIVITIES	COSTS	
	SUBTOTAL	TOTAL
A. STUDIES		5,055.23
1. Devising of mechanisms and framing of guidelines for evaluation of environmental impacts	789.39	
2. Program of incentives to preservation	257.88	
3. Water resources management and regulation of water courses in public use	908.16	
4. Design and implementation of regional environmental planning systems	536.08	
5. Design and establishment of community participation systems	464.00	
6. Program for supervision and control of natural resources	656.26	
7. Master plan for regional environmental sanitation	718.16	
8. Design and implementation of the project monitoring system	383.00	
9. Administrative and financial systems	167.10	
10. Collection systems	175.20	
B. TRAINING		1,668.00
C. EQUIPMENT (COMPUTER SYSTEMS)		400.00
T O T A L		7,123.23

**2. STRENGTHENING OF ENVIRONMENTAL AGENCIES
AND ORGANIZATION OF THE MINISTRY OF THE ENVIRONMENT
(US\$ thousands)**

ACTIVITIES	COSTS	
	SUBTOTAL	TOTAL
A. STUDIES AND TECHNICAL ASSISTANCE		3,984.86
1. Framing of environmental policies	914.64	
2. Environmental information systems	1,091.34	
3. Environmental pollution control	860.92	
4. Design of internal organization of the ministry	126.00	
5. Installation of the system of administrative, financial and technical information and budgetary control	445.80	
6. Technical and administrative advisory services for startup of the Ministry of the Environment	546.16	
B. TRAINING		928.00
1. Technical aspects	386.00	
2. Administrative and financial aspects	88.00	
3. Staff members of the Ministry of the Environment (technical, administrative and financial)	454.00	
C. EQUIPMENT		200.00
1. Computer equipment for the Ministry of the Environment	200.00	
T O T A L		5,112.86

3. TRAINING FOR CORPORATIONS AND OTHER AGENCIES
TECHNICAL AND FINANCIAL-ADMINISTRATIVE COURSES
(US\$ thousands)

SUBJECTS	TRAINING BENEFICIARIES								
	CORPORATIONS			ENVIRONMENTAL AGENCIES			MINISTRY OF THE ENVIRONMENT		
	No. of trainees	No. of courses	Cost	No. of trainees	No. of courses	Cost	No. of trainees	No. of courses	Cost
TECHNICAL COURSES									
Planning and execution of preinvestment projects	475	15	127	180	3	45	120	3	
Preparation and execution of inv. project	445	14	141	200	3	48	120	3	
Preservation of ecosystems and management of protected areas	360	14	190	300	3	72	120	3	
Development of environmental technology	260	8	110	220	3	64			
Community participation in decision-making and project execution	400	18	200	220	3	58	120	3	
Control, surveillance and application of environmental control standards	535	16	255	320	3	84	160	4	
Legislation and jurisprudence on the environment and the management of natural resources	40	1	15	60	1	15	80	3	
Formulation and development of environmental policies							240	6	
FINANCIAL-ADMINISTRATIVE COURSES									
Strategic management and planning	490	14	188	380	6	88	240	6	
Administration of human resources	280	8	84						
Financial management	595	17	197						
Administration of physical resources	280	8	86						
Auditing	210	6	75						
TOTAL	4,370	139	1,668	1,880	31	474	1,200	31	

employee may take three to five courses.

4. TRAINING FOR REGIONAL CORPORATIONS AND ENVIRONMENTAL AGENCIES
SUMMARY OF COURSES AND COSTS
(US\$ thousands)

Beneficiaries of the training	Total number of participants	No. of technical courses	Cost of technical courses	No. of financial courses	Cost of financial courses	Total
Regional corporations	4,370	86	1,038	53	630	1,668
Environmental agencies	1,880	19	386	6	88	474
Ministry of the Environment ^{1/}	1,200	25	352	6	102	435
TOTAL	7,450	130	1,776	65	820	2,577

^{1/} To be carried out only if this ministry is set up.

5. INSTITUTIONAL STRENGTHENING
COST OF CONSULTANCIES, EQUIPMENT AND TRAINING
(US\$ thousands)

Beneficiaries of strengthening	Cost of components			Total cost
	Equipment	Studies	Training	
onal corporations	400.0	5,055.23	1,668.0	7,123.23
stry of the ronment <u>1/</u>	200.0	3,984.86	454.0	4,638.86
ronmental agencies	-	-	474.0	474.00
T O T A L	600.0	9,040.09	2,596.0	12,236.09

1/ To be carried out only if this ministry is set up.

6. STRENGTHENING OF ENVIRONMENTAL AGENCIES
INSTITUTO COLOMBIANO PARA EL FOMENTO
DE LA EDUCACION SUPERIOR (ICFES)
(US\$ thousands)

TOPICS	TARGET POPULATION	COST	ACTIVITIES
Environmental legislation	Professionals	140.0	4 seminars 2 courses
Project evaluation	Managers Professionals	125.0	3 seminars 2 courses
Establishment of environmental accounts	Managers Professionals	129.0	3 courses 2 intl. internships
Organization and management of SNA	Professionals	45.0	3 seminars
Planning and development of environmental education programs	Professionals Technicians	125.0	3 seminars 2 courses
Watershed planning and management	Professionals Technicians	100.0	2 courses 20 internships (Col.)
Soil conservation and management practices	Professionals Technicians	100.0	2 courses 20 internships (Col.)
Sustained management of natural forests	Professionals	160.0	4 courses
Sustained management of estuaries and mangrove swamps	Professionals	80.0	2 courses
Wildlife	Professionals	102.5	2 courses 5 intl. internships
Management and protection of national parks	Professionals Technicians	180.0	4 courses 20 internships (Col.)
Methodology for evaluation of environmental impacts	Professionals	160.0	4 courses
Sustained management of arid and semi-arid areas	Professionals	110.0	2 seminars 2 courses
Sustained management of wetlands	Professionals	110.0	2 seminars 2 courses

TOPICS	TARGET POPULATION	COST	ACTIVITIES
Prod. management of human settlements in national parks	Professionals	125.0	3 seminars 2 courses
Management of geographic information systems	Professionals	110.0	2 seminars 2 courses
Land-use management methods	Professionals	110.0	2 seminars 2 courses
The environment and development	Professionals Managers	75.0	5 seminars
Corporations and bureaux of the national public environmental system	Technicians Professionals Managers	175.0	1 seminar 4 courses
Project administration and coordination		80.0	
T O T A L		2,341.5	

**7. STRENGTHENING OF ENVIRONMENTAL AGENCIES
 ACTIVITIES AND COSTS OF TRAINING FOR EXTENSION WORKERS
 SERVICIO NACIONAL DE APRENDIZAJE (SENA)**

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
Number of train-the-trainer courses (24 trainers)	1					
Number of students in train-the-trainer courses	24					
Training of extension workers -- number of six-day events	80	622	622	622	622	2,510
Number of students in six-day events	1,600	12,435	12,435	12,435	12,435	51,935
Technical training for extension workers -- number of one-day events	120	120	125	125	125	510
Number of students in one-day events	6,000	6,000	6,250	6,250	6,250	30,750
Cost (US\$)	715,030	1,318,163	1,311,020	1,311,020	1,311,020	5,966,253

8. STRENGTHENING OF ENVIRONMENTAL AGENCIES
TRAINING OF EXTENSION WORKERS/PERSONNEL
SERVICIO NACIONAL DE APRENDIZAJE (SENA)

CORPES (Regional Planning Council)	Municipalities	Extension workers	SENA instructors	"Train-the- trainers" per CORPES	Support personnel
Atlantic coast	159	477	173	4	2
East-central	486	1,458	394	10	2
West	318	954	436	8	2
Orinoquia	54	162	91	2	2
National coordination (7)					2
T O T A L	1,017	3,051	1,094	26	10

9. SUMMARY OF ENVIRONMENTAL EDUCATION ACTIVITIES
 PROGRAM OF THE MINISTRY OF EDUCATION
 (US\$ thousands)

Subject	Place	Unit	Number of units	Cost per unit	Total cost
Introductory information workshop	Bogota	workshop	1	2.67	2.67
Workshops for training of teachers on the environment and on renewable natural resources	Department seats	workshop	145	3.29	477.44
Support to school environmental projects	nationwide	project	1,500	0.40	600.00
Research	nationwide	research	3	26.67	80.00
Printed matter for instructors and as visual aids	nationwide	posters	61,360	0.004	204.53
		video-cassettes	32,000	0.005	157.87
Monitoring and evaluation	nationwide	workshop	25	3.87	96.67
Consulting services	nationwide	professionals	38	38.55	1,465.07
		support			239.77
Development of microcenters	nationwide	microcenter	200	0.07	13.33
T O T A L					3,337.34

10. TRAINING OF PROFESSIONAL STAFFS OF ENVIRONMENTAL AGENCIES
SUMMARY OF PROJECT COSTS BY YEAR
PROGRAM OF THE MINISTRY OF EDUCATION
(US\$ thousands)

SUBJECT	TOTAL COST	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Introductory information workshop	2.67	2.67				
Teacher training workshops	477.44	190.86	71.64	71.64	71.64	71.64
Support to school environmental projects	600.00	240.00	90.00	90.00	90.00	90.00
Research	80.00	80.00				
Printed matter for instructors and as audiovisual material	204.53	89.48	38.35	38.35	38.35	
	157.87	69.07	29.60	29.60	29.60	
Monitoring and evaluation	96.67	38.67	14.50	14.50	14.50	14.50
Institutionalization of personnel and monitoring	1,465.07	701.16	142.96	181.36	219.76	219.76
	239.77	109.11	42.24	42.24	42.24	3.00
Development of microcenters	13.39	5.39	2.00	2.00	2.00	2.00
T O T A L	3,337.34	1,526.41	431.29	469.69	508.09	401.40

11. SUBPROGRAM B: CONSOLIDATED TABLE OF TOTAL COSTS
(US\$ thousands)

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
TRAINING	3,485.4	2,766.5	2,776.7	2,682.1	2,530.3	14,241.0
Ministry of Education	1,526.4	431.3	469.7	508.1	401.8	3,337.3
ENR	715.0	1,318.2	1,311.0	1,311.0	1,311.0	5,966.2
CFES	468.0	468.2	469.5	468.0	469.5	2,341.2
Corporations and other entities	776.0	549.0	528.0	395.0	348.0	2,596.0
STUDIES	1,000.0	1,515.0	2,515.6	2,770.8	1,238.6	9,040.0
Ministry of the Environment	-	315.0	1,215.6	1,215.6	1,238.6	3,984.8
Corporations	993.57	1,200.0	1,300.0	1,555.2	-	5,055.8
TOTAL TRAINING AND STUDIES	4,478.97	4,281.5	5,292.3	5,452.9	3,768.9	23,281.6

12. INSTITUTIONAL STRENGTHENING
DETAILED BUDGET OF STUDIES, BY INSTITUTION
(US\$ thousands)

Institution	International consultants		Local consultants		General expenses	Travel, subsistence, and installation		Total
	Months	Cost	Months	Cost	Cost	Months	Cost	
Regional corporations	110	660.0	724	1,810.0	1,976.0	7,090	609.23	5,055
Ministry of the Environment	170	1,388.0	457	1,225.0	956.4	1,200	414.96	3,984
T O T A L	280	2,800.0	1,181	3,543.0	3,940.0	8,290	1,024.19	9,040

**13. INSTITUTIONAL STRENGTHENING
DETAILED BUDGET OF STUDIES, BY YEAR
CONSULTANTS AND COUNTERPART PERSONNEL
(months of work)**

INSTITUTION	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
INTERNATIONAL CORPORATIONS	155	263	280	316	-	
International consultants	18	28	30	34	-	
Local consultants	110	188	200	226	-	
Counterpart personnel	27	47	50	56	-	
MINISTRY OF THE ENVIRONMENT	-	43	224	224	230	
International consultants	-	10	53	53	54	
Local consultants	-	27	142	142	146	
Counterpart personnel	-	6	29	29	30	
TOTAL	155	306	504	540	230	

14. INSTITUTIONAL STRENGTHENING
DETAILED BUDGET OF COSTS OF STUDIES, BY YEAR
(US\$ thousands)

INSTITUTION	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
REGIONAL CORPORATIONS	1,000.0	1,171.0	1,299.1	1,585.1	-	5,055.2
Fees of international consultants	331.2	101.6	112.4	114.8	-	660.0
Fees of local consultants	275.6	380.7	495.9	657.8	-	1,810.0
Travel, subsistence and installation	93.2	158.3	168.1	189.6	-	609.2
General expenses	300.0	530.4	522.7	622.9	-	1,976.0
MINISTRY OF THE ENVIRONMENT	-	344.0	1,218.5	1,185.7	1,238.6	3,986.8
Fees of international consultants	-	61.2	446.2	446.2	434.4	1,388.0
Fees of local consultants	-	178.7	372.2	341.4	333.2	1,225.5
Travel, subsistence and installation	-	24.8	128.3	128.3	133.5	414.9
General expenses	-	79.3	269.8	269.8	337.5	956.4
TOTAL	1,000.0	1,515.0	2,515.6	2,770.8	1,238.6	9,040.0

SUBPROGRAMA MANEJO DE RECURSOS NATURALES / COMPONENTE MICROCUENCAS
CARTERA DE PROYECTOS DE MICROCUENCAS IDENTIFICADOS EN EL PROGRAMA

PRESUPUESTO PRELIMINAR							
TASA DE CAMBIO 1 US=\$ COL 700							
No.	NOMBRE	ENTIDAD	AREA Has	TOTAL	TOTAL	COSTO/	ESTADO
No.	SUBCUENCA/MICROCUENCA	INTER	INTER	\$(000)Col	US\$(000)	\$US(000)	PROYEC
PLAN DE ACCION FORESTAL PARA COLOMBIA							
PROGRAMA AMBIENTAL COLOMBIA BID (C0-0041)							
SUBPROGRAMA MANEJO DE RECURSOS NATURALES / COMPONENTE MICROCUENCAS							
CARTERA DE PROYECTOS DE MICROCUENCAS IDENTIFICADOS EN EL PROGRAMA							

PRESUPUESTO PRELIMINAR							
TASA DE CAMBIO 1 US=\$ COL 700							
No.	NOMBRE	ENTIDAD	AREA Has	TOTAL	TOTAL	COSTO/	ESTADO
No.	SUBCUENCA/MICROCUENCA	INTER	INTER	\$(000)Col	US\$(000)	\$US(000)	PROYEC
OO1	CALANDAIMA	CAR	910	410826	587	0.64	E02
OO2	CURI	CAR	1220	544812	778	0.64	E02
OO3	LA HONDA	CAR	510	233933	334	0.66	E02
TOTAL CAR			2640	1189371	1699		
OO4	ANGULA	CDMB	785	560321	800	1.02	E02
OO5	ARNANIA	CDMB	600	882000	1260	2.10	E02
OO6	CHARTA ALTO	CDMB	900	970900	1387	1.54	E02
OO7	FRIO ALTO	CDMB	550	693700	991	1.80	E02
OO8	GOLONDRINAS	CDMB	510	233933	334	0.66	E02
OO9	GUARUMALES	CDMB	850	907101	1296	1.52	E02
O10	LA HONDA	CDMB	650	1039500	1485	2.28	E02
O11	ORO ALTO BAJO	CDMB	700	643337	919	1.31	E01
O12	ORO BAJO ALTO	CDMB	800	1071000	1530	1.91	E02
O13	VETAS	CDMB	1150	762474	1089	0.95	E01
TOTAL CDMB			7495	7764266	11092		
O14	GUAJIRA	CORPOGU	3865	1739250	2485	0.64	E04
TOTAL GUAJIRA			3865	1739250	2485		
O15	ISCALA	CORPONO	4750	1010532	1444	0.30	E02
O16	ALGODONAL	CORPONO	4750	1010532	1444	0.30	E02
O17	CHERQUETA	CORPONO	680	298900	427	0.63	E04
O18	EL ARPERO	CORPONO	1000	442400	632	0.63	E04
O19	LA LEGIA	CORPONO	450	193200	276	0.61	E04
O20	LA TASCARENA	CORPONO	350	139300	199	0.57	E04
O21	LA VOLCANA	CORPONO	420	179200	256	0.61	E04
O22	MONTEDENTRO	CORPONO	1330	387378	553	0.42	E01
O23	SISCATA	CORPONO	1050	445900	637	0.61	E04
O24	TEJO	CORPONO	1150	926100	1323	1.15	E03
TOTAL CORPONOR			15930	5033442	7191		
O25	CHIPALO	CORTOLIM	870	382021	546	0.63	E01

PLAN DE ACCION FORESTAL PARA COLOMBIA
PROGRAMA AMBIENTAL COLOMBIA BID (C0-0041)
SUBPROGRAMA MANEJO DE RECURSOS NATURALES / COMPONENTE MICROCUENCAS
CARTERA DE PROYECTOS DE MICROCUENCAS IDENTIFICADOS EN EL PROGRAMA

PRESUPUESTO PRELIMINAR							
TASA DE CAMBIO 1 US=\$ COL							
700							
No.	NOMBRE	ENTIDAD	AREA Has	TOTAL	TOTAL	COSTO/	ESTADO
	SUBCUENCA/MICROCUENCA		INTER	\$(000)Col	US\$(000)	\$US(000)	PROYEC
O26	COMBEIMA	CORTOLIM	880	494130	708	0.82	E01
O27	LA CAIMA	CORTOLIM	1010	606200	868	0.86	E04
O28	LA CHUMA	CORTOLIM	430	296800	424	0.99	E04
O29	LUISA ALTO	CORTOLIM	1540	726147	1037	0.67	E03
O30	OPIA	CORTOLIM	1000	402962	576	0.58	E03
O31	PALMARA	CORTOLIM	250	189700	271	1.08	E02
O32	SABANDIJA	CORTOLIM	820	374376	535	0.65	E02
O33	VALLECITOS	CORTOLIM	995	474089	677	0.68	E03
TOTAL CORTOLIMA			7775	3946425	5638		
O34	CAPITANES	CRC	2000	647638	925	0.46	E02
O35	GUACHICONO	CRC	2020	773500	1105	0.55	E04
O36	HATO VIEJO (MERCAD	CRC	1340	776743	1110	0.83	E01
O37	MAZAMORAS	CRC	2460	902116	1289	0.52	E02
O38	NEGRO	CRC	1400	961100	1373	0.98	E04
O39	PANCITARA	CRC	1830	1943200	2776	1.52	E04
O40	PUTIS	CRC	1350	509600	728	0.54	E04
O41	SAJANDI	CRC	1950	587099	839	0.43	E02
O42	SAN PEDRO	CRC	800	547400	782	0.98	E04
O43	SANBINGO	CRC	2500	962500	1375	0.55	E04
O44	TALLAS	CRC	1990	613211	876	0.44	E02
TOTAL CRC			19640	9224107	13177		
O45	BUENA VISTA	CRQ	280	118449	169	0.60	E02
O46	GRIS	CRQ	720	303265	433	0.60	E02
O47	LEJOS	CRQ	800	325431	465	0.58	E02
O48	OSO	CRQ	260	102102	146	0.56	E02
O49	PORTACHUELO	CRQ	380	147556	211	0.55	E02
O50	QUINDIO	CRQ	1103	864500	1235	1.12	E01
O51	ROBLES	CRQ	116	57527	82	0.71	E01
O52	SAN JULIAN	CRQ	280	105015	150	0.54	E02
O53	SANTO DOMINGO	CRQ	360	174017	249	0.69	E01
TOTAL CRQ			4299	2197862	3140		
O54	CEDRO GORDO-PEDR	CVC	400	31500	45	0.11	E03
O55	DRENAJE A CAUCA	CVC	1212	483700	691	0.57	E03
O56	GRANDE	CVC	1100	493500	705	0.64	E03
O57	LA CRISTALINA	CVC	134	202300	289	2.16	E03
O58	MANCHAY	CVC	220	187600	268	1.22	E03
O59	MICHICAO Y CAJIBIO	CVC	490	198800	284	0.58	E03
O60	MONDOMO	CVC	3250	964814	1378	0.42	E01
O61	PESCADOR	CVC	2800	669900	957	0.34	E03
O62	PIEDRAS	CVC	1200	546243	780	0.65	E01
O63	QUILICHAO	CVC	1035	500828	715	0.69	E01

PLAN DE ACCION FORESTAL PARA COLOMBIA
PROGRAMA AMBIENTAL COLOMBIA BID (C0-0041)
SUBPROGRAMA MANEJO DE RECURSOS NATURALES / COMPONENTE MICROCUENCAS
CARTERA DE PROYECTOS DE MICROCUENCAS IDENTIFICADOS EN EL PROGRAMA

PRESUPUESTO PRELIMINAR						
TASA DE CAMBIO 1 US=\$ COL						
700						
No.	NOMBRE	ENTIDAD	AREA Has	TOTAL	TOTAL	COSTO/ ESTADO
	SUBCUENCA/MICROCUENCA		INTER	\$(000)Col	US\$(000)	\$US(000) PROYEC
O64	RIO SUCIO	CVC	1800	627884	897	0.50 E01
O65	RIO SUCIO II	CVC	2055	1355900	1937	0.94 E03
O66	RIO TETA	CVC	1200	652400	932	0.78 E03
O67	SALADO-NEGRO	CVC	425	246400	352	0.83 E03
O68	SALVAJINA	CVC	3100	981510	1402	0.45 E01
TOTAL CVC			20421	8143280	11633	
O69	ACHIOTE	CVS	546	285009	407	0.75 E03
O70	BIJAO-CHIKUITO	CVS	669	403107	576	0.86 E02
O71	CEIBO	CVS	440	329590	471	1.07 E02
O72	EL PEÑON	CVS	460	330214	472	1.03 E02
O73	MAPURINCE	CVS	720	337986	483	0.67 E02
O74	PATICO	CVS	610	307312	439	0.72 E02
TOTAL CVS			3445	1993218	2847	0.83 E04
O75	GUAJARO	G.ATLANTI	1200	916400	1309	1.09 E04
O76	EL BORUGO	G.CAQUET	100	50000	71	0.71 E04
O77	ACUEDUCTOS MUNICI	G.CESAR	800	600000	857	1.07 E04
O78	BARBILLAS	G.HUILA	280	132000	189	0.67 E04
O79	CABRERA	G.HUILA	1360	512570	732	0.54 E04
O80	CACHICI AIPE	G.HUILA	1560	550568	787	0.50 E04
O81	CEIBAS	G.HUILA	5195.7	2172179	3103	0.60 E02
O82	EL LINDERO	G.HUILA	280	122839	175	0.63 E04
O83	EL PUEBLO	G.HUILA	280	122839	175	0.63 E04
O84	GARZON	G.HUILA	1900	412903	590	0.31 E04
O85	GRANDIOSA	G.HUILA	1560	550568	787	0.50 E04
O86	GUACHICONO	G.HUILA	1900	455982	651	0.34 E04
O87	LA GRANDE	G.HUILA	280	122839	175	0.63 E04
O88	NUTRIA	G.HUILA	1560	580000	829	0.53 E04
O89	PERDIZ	G.HUILA	1300	604863	864	0.66 E04
O90	RIO FRIO	G.HUILA	1560	512570	732	0.47 E04
O91	TARQUI	G.HUILA	1560	550568	787	0.50 E04
O92	VICIOSA	G.HUILA	1900	455982	651	0.34 E04
O93	YAGUILGA	G.HUILA	1560	550568	787	0.50 E04
TOTAL HUILA			24036	8409838	12014	
O94	ACUEDUCTOS MUNICI	G.META	3432	2933357	4191	1.22 E04
O95	MINIDISTRITOS DE RI	G.META	500	250000	357	0.71 E04
O96	SIBAO	G.META	338	165725	237	0.70 E03
O97	URUIMES	G.META	440	219958	314	0.71 E03

PLAN DE ACCION FORESTAL PARA COLOMBIA
PROGRAMA AMBIENTAL COLOMBIA BID (C0-0041)
SUBPROGRAMA MANEJO DE RECURSOS NATURALES / COMPONENTE MICROCUENCAS
CARTERA DE PROYECTOS DE MICROCUENCAS IDENTIFICADOS EN EL PROGRAMA

PRESUPUESTO PRELIMINAR							
TASA DE CAMBIO 1 US=\$ COL							
700							
No.	NOMBRE	ENTIDAD	AREA Has	TOTAL	TOTAL	COSTO/	ESTADO
	SUBCUENCA/MICROCUENCA		INTER	\$(000)Col	US\$(000)	\$US(000)	PROYEC
TOTAL META			3432	2933357	4191		
O98	AGUILITA	G.SANTAN	320	118677	170	0.53	E02
O99	ARENOSA	G.SANTAN	350	134827	193	0.55	E02
100	CAÑADA	G.SANTAN	510	230184	329	0.64	E02
101	CURITI	G.SANTAN	1980	886431	1266	0.64	E02
102	HONDA	G.SANTAN	1250	351316	502	0.40	E03
103	LAJAS	G.SANTAN	705	251559	359	0.51	E03
104	OLABICA	G.SANTAN	375	135340	193	0.52	E03
TOTAL G. SANTANDER			5490	2108334	3012		
105	CERRO GUALON	G.SUCRE	50	25000	36	0.71	E04
106	GACHETA	SMAC	10	5000	7	0.71	E04
107	GUTIERREZ	SMAC	350	230000	329	0.94	E04
108	LAS PAVA	SMAC	20	10000	14	0.71	E04
109	BATAM	SMAC	227	100000	143	0.63	E04
110	CHINARA-LOS QUENT	SMAC	428	188277	269	0.63	E02
111	FUSAGASUGA	SMAC	490	215550	308	0.63	E04
112	LA HONDA	SMAC	45	20000	29	0.63	E04
113	LA PITA/RIO NEGRO	SMAC	34	15000	21	0.63	E04
114	PERUCHO/ LA VEGA	SMAC	568	250000	357	0.63	E04
115	LAS BRUJAS	SMAC	227	100000	143	0.63	E04
116	PALMAR	SMAC	682	300000	429	0.63	E04
117	RIO BLANCO	SMAC	1848	812982	1161	0.63	E04
118	RIO CHOCHO	SMAC	341	150000	214	0.63	E04
119	RIO CLARO	SMAC	568	250000	357	0.63	E04
120	RIO SECO	SMAC	648	285000	407	0.63	E04
121	SALITRE BLANCO	SMAC	114	50000	71	0.63	E04
122	SAN ANTONIO	SMAC	114	50000	71	0.63	E04
123	SAN BERNARDO	SMAC	636	280000	400	0.63	E04
124	SAN CAYETANO	SMAC	234	102870	147	0.63	E04
125	SIBATE	SMAC	114	50000	71	0.63	E04
126	LA TIGRERA/CHORRE	SMAC	250	160000	229	0.91	E04
SUBTOTAL SMAC			7947.2	3624679	5178		
GRAN TOTAL			128585	6E+07	85570		

SMAC: SECRETARIA DEL MEDIO AMBIENTE DE CUNDINAMARCA

E01	FACTIBILIDAD FORMATO PAFC/BID
E02	PREFACTIBILIDAD CON DATOS PARA FACTIBILIDAD PAFC/BID
E03	PERFIL FORMATO PAFC/BID
E04	PERFIL OTRO FORMATO

PROGRAM ADMINISTRATION PERSONNEL

Table 1. Personnel of the coordinating unit

Office/Personnel	Number
1. Office of Coordinator	4
Program Coordinator	1
Coordinator Assistant	1
Administrator of Subprogram C	1
Secretary	1
2. Secretariat for Technical Affairs	11
Specialist in land-use planning	1
Specialist in preservation of ecosystems	1
Specialist in integral watershed management	1
Environmental economists	2
Specialist in agroforestry development	1
Specialists in participation by women and the community in development	2
Water resources engineer	1
Secretary	1
Administrative assistant	1
3. Secretariat for Institutional Affairs	10
Coordinator for institutional affairs	1
Secretary	1
Expert in environmental education	1
Expert in information systems	1
Expert in analytical techniques	1
Expert in pollution control	1
Expert in environmental planning	1
Economist	1
Expert in public administration	1
Expert in environmental policy	1
4. Secretariat for Financial Affairs	8
Financial specialist	1
Accountant	1
Lawyer	1
Legal assistant	1
Systems engineer	1
Financial assistants	2
Secretary	1
TOTAL	33

SAMPLE OF PROJECTS FOR SUBPROGRAM C
(US\$ thousands)

Project	Classification 1/	Cost	Requested 2/	Recommended financing	Executing/Promoting agency
Projects evaluated by the DNP					
Preserv. Natural Resources Salento Municipality*	F,B,G	600	420	190	Salento municipality
Preservation of Córdoba Wetlands	A,B	591	502	413	CVS
Diagnosis of Plant Diversity	A	570	485	399	National University
Bogota Sanitary Landfill	D	2,647	1,323	620	EDIS-CAR
Requirements in Environmental Human Capital	F	290	247	100	University of the Andes
Control of Pollution from Mobile Sources	G	593	504	415	CAR-ECOPETROL
Management of Sonso Lagoon	A	1,103	700	700	CVC
Management of Fonce River Basin/Viroli Park	A	2,482	1,500	750	Natura Found. Univ.Javeriana IND
Restoration of Sierra Nevada Rainforest	B	197	55	55	University of the Andes
Air Quality and Residues Laboratory - CVC	D	1,500	1,275	750	CVC
Air Quality Laboratory - Manizales	D	650	552	455	CORPOCALDAS
Subtotal		11,223	7,563	4,847	
Share		100.0%	67.4%	64.1%	
Projects awaiting final evaluation 3/					
Recovery of Cerro Garrapatero	B,D	420	250		Cerro Garrapatero Inter.Comm. Co
Chiribiquete Park Conservation Plan	A	517	381		Puerto Rastejo Foundation-INDERE
Tesca Swamp Recovery Plan	B	425	221		Universidad Javeriana
Plan of Action Cartagena Fishery Resources	B	322	158		Cartagena municipality-Univ.Jave
Condor Recovery	A	228	194		CORPOCALDAS
Anchicaya Ethnodevelopment and Biodiversity	B	2,700	1,500		Herencia Verde Org.Comunidades N
Environmental Land Use Planning Municipalities	E,A	128	108		Municipio Nuevo Corporation
of Cundinamarca Department					
Subtotal		4,740	2,812		
Share			59.3%		
TOTAL		15,963	10,375		

Conservation of natural assets
Management of natural resources
Disaster prevention
Protection of human environment
Institutional development
Environmental education
Prefeasibility and feasibility studies
Strong participation by women in the project

ount requested before determination of the ceilings for the subprogram.
re are detailed profiles or prefeasibility studies reviewed by the project team, and a preliminary evaluation made by the DNP, but an analysis
independent experts remains pending.

OPERATING REGULATIONS FOR SUBPROGRAMS A AND B

I. PURPOSE

- 1.1 The purpose of these regulations is to spell out the responsibilities of the different participants in the execution scheme and the relationships between the DNP, the coordinating unit, and the executing agencies. They establish the policies, terms, conditions and procedures that will govern the execution of Subprograms A and B of the Environmental and Forestry Action Program and the administration of the agreements between the DNP and the participating agencies. Subprogram C will be executed in accordance with the Operating Regulations of the Environmental Investment Program.

II. EXECUTION ARRANGEMENTS

A. Coordinating unit

- 2.1 The organizational structure of the program consists of the coordinating unit (CU) in the National Planning Department (DNP) and the executing agencies. The CU will have a program coordinator and three groups, termed secretariats for technical affairs, institutional affairs, and financial affairs. The corresponding units in the DNP (UDA, DEPA, and the General Secretariat) will provide advisory services and technical support to the CU. There will also be an advisory body - the Coordinating Committee. The CU is directly answerable to the Deputy Director of the DNP.
- 2.2 One basic function of the CU staff will be to draw up and revise the AGREEMENTS to be entered into between the DNP and the executing agencies. This includes supervision of the activities in execution of the projects, technical support, the solution of problems that arise in the course of the program, and appropriate monitoring of activities.
- 2.3 To the extent possible, the personnel of the CU will be transferred to the Ministry of the Environment when it commences operations. In the first year of operation of this ministry the personnel could be under contract to the DNP to ensure continuity of systems and procedures.

B. Relations with the Inter-American Development Bank

- 2.4 The CU personnel will be responsible for drawing up regular reports and responding to special requests for information on the progress of the program in accordance with the provisions of the loan contracts between the Bank and the Government of Colombia.

C. Executing agencies

- 2.5 Subprogram A. The executing agencies of this subprogram will be as follows: (1) microwatershed component: the 10 selected regional corporations: CARDER, CORPOCALDAS, CVC, CVS, CORPAMAG, CRQ, CORPONOR, CDMB, CORTOLIMA, and CRC. Later on other corporations, municipalities and departmental governments may execute projects if they meet the selection criteria outlined in these regulations; (2) rehabilitation of the Santa Marta Wetlands: CORPAMAG; (3) Los Nevados Park: the Park Service of INDERENA and CORPOCALDAS, with the support of the CORTOLIMA, CRQ and CARDER corporations; and (4) guadua bamboo development: CRQ through the National Guadua Center.
- 2.6 Subprogram B. The components of this subprogram will be executed by the following agencies: (a) administrative and technical assistance to the regional corporations: the CU, in consultation and coordination with the corporations; (b) strengthening of the National Environmental System: the CU, in consultation and coordination with the agencies concerned; and (c) environmental education and training: (i) training of managers of environmental institutions, by ICFES; (ii) training of extension workers, by SENA, and (iii) basic education, by the Ministry of Education.

III. USE OF THE PROGRAM RESOURCES

- 3.1 The resources of Subprograms A and B are provided from three sources:
- a. The Inter-American Development Bank (IDB), in two loans, one from the ordinary capital and the other from the Fund for Special Operations.
 - b. The national budget, in appropriations and allocations to the public national, departmental and municipal entities.
 - c. The communities, in the form of specific contributions in money or in kind from the beneficiaries of the projects.
- 3.2 Each of these sources may impose conditions of its own, and it must therefore be verified that they are fulfilled in the subprograms. This should be taken into account in the annual programming of the investment budget for the different executing agencies that will be using resources of the subprograms.

A. Cofinancing arrangement

- 3.3 Cofinancing will be arranged in the form of nonreimbursable contributions and, to be approved, must be accompanied by counterpart contributions from the public and private entities (organized

beneficiaries). The executing agencies (corporations) and beneficiary organizations may make their financial contribution in money, goods, or services, and it is for the DNP (the coordinating unit) alone to determine the form(s) of contribution that are acceptable in each project.

- 3.4 The executing agency will determine the proportions of the cofinancing contributions to be made by the cofinancing entities to each project in each year.

B. Items not eligible for financing

- 3.5 Resources of this subprogram may not be used to finance the repayment of debts, purchases of shares, securities and/or land, or to pay taxes or nonincremental operating costs (recurring costs).

IV. PROGRAMMING

- 4.1 Every year the coordinating unit will draw up for the investments of these subprograms an operating plan stating for each project: (a) its total cost, (b) the amounts and sources of its cofinancing, (c) the part of its cost that may be financed in each fiscal period, and (d) its executing agency, (e) location, (f) priority, (g) status, and (h) execution time.

A. Project identification

- 4.2 It is up to the community and the regional and national institutions to identify projects not specified in the program. The coordinating unit will assist these organizations in the identification and formulation of projects as they require. It must be borne in mind that real community participation is an essential ingredient of the projects and activities under the program.

B. Prioritization of projects

- 4.3 Of the projects that meet the selection criteria, the executing unit will give priority to those that present the highest ratio of positive externalities to costs covered by the central government (present value of externalities/present value of central government contributions).

V. GENERAL RULES FOR EXECUTION OF THE PROGRAM

A. Utilization of loan resources

- 5.1 The loan resources will be incorporated into the DNP's investment budget and utilized under annual contracts with the executing agencies. The borrower undertakes to determine the amounts needed to meet the counterpart commitments in the different entities, and those amounts will be included in the draft National Budget Law,

for which the procedure prescribed in Law 38 of 1989 will be followed.

- 5.2 The resources will be utilized yearly in the projects under an annual operating program in accordance with formats designed by the coordinating unit and with an expenditure timetable coordinated with the disbursement program.
- 5.3 The projects under consideration for Subprogram A will be reviewed and evaluated, and, when approved by the coordinating unit for inclusion in that subprogram, will be registered in the project bank and included in the annual plans of operations and the budgets of the corporations.

B. Contracts and agreements

- 5.4 When a project has been approved under the annual plan of investment operations, the requisite contracts will be entered into for its execution entirely or in part with resources of the program.
- 5.5 If it should become necessary to enter into contracts covering more than one fiscal period, their inclusion in the annual plan of investment operations must first be approved by CONFIS and certified by the Public Investments Unit of the DNP. The contractual counterpart obligations between the Government of Colombia and the IDB must also be taken into account.

C. Tendering and procurement

- 5.6 All acquisitions of goods and services proposed with resources of the program shall be effected in accordance with the bidding and contracting procedures agreed upon with the Bank. The applicable amounts and procedures in each case are established in the Manual for the Administration of External Resources.

VI. EXECUTION OF THE COMPONENTS AND SPECIFIC PROJECTS

A. Selection criteria for the evaluation of microwatershed projects

- 6.1 The regional corporations will present to the CU the projects they propose to execute each year. Each project will be supported by a feasibility study. The CU will evaluate each project in light of the following selection criteria:
 - a. The rehabilitation and preservation of the microwatershed must emphasize forest management through either conversion of the land to forest and agroforestry use or through preservation of the existing forests.
 - b. Preference will be given to microwatersheds that supply community water systems in towns, irrigation districts or

hydroelectric projects, or whose production generates significant social impacts, and to areas with large proportions of low-income farmers.

- c. In the microwatershed to be selected, the degradation problems, such as soil erosion, drought, loss of forest cover, and threats to flora and fauna, must be understood. The magnitude of the problems must be quantified and rated and the reasons stated why the degradation in the microwatershed is such as to merit priority action by the corporation.
- d. An evaluation must be made of the water supply in the microwatershed and of the direct and indirect demand for it. The volume of water produced in the microwatershed and the pattern of that production must be evaluated. In regard to the demand for water, an evaluation will have to be made of the water requirements for human consumption and for the supply of population centers, for agricultural and forest production and manufacturing, and for the generation of hydroelectricity. Special attention will be paid to the population using this resource directly in each of these categories and to the impact of the availability of water, in the order of the priorities set out in legislation.
- e. The project for the management of plant cover in microwatersheds must derive from a proposal or plan for the integral management of the hydrographic unit that has the backing and active involvement of the beneficiary community and clearly establishes the responsibilities and commitments of the different agents involved in each phase of its execution.
- f. Regarding the characteristics of the project, the measures proposed must be the outcome of an evaluation of different strategies, mechanisms and measures put forward to solve the problems identified, and must satisfy the following criteria:
 - (i) The action to be taken must be technically feasible. Proven technologies must be used; they must be for improvement of the plant cover, soil stabilization, torrent rectification, the development of systems of agroforestry and for the preservation of forests, and be such as to help improve farmers' incomes.
 - (ii) The community must participate in the identification of alternative solutions and in arrangements for activities in all phases of the project. Support to organizational work under the project must promote the consolidation of a microwatershed self-management model. The draft contracts included in the feasibility studies must have been prenegotiated with the community organizations that will participate in the project.

- (iii) The activities, timetables and goals must be clearly stated, especially in their quantitative aspects, and the responsibilities of the participants in the execution of the project must be spelled out.
 - (iv) The programming of the activities and flow of resources down to the horizon of the project must be in final form.
 - (v) There must be a clearly stated scheme for cofinancing the envisaged investments within the limits stated in paragraph h. The program will not finance any project in its entirety because real local participation is a necessary condition for continuity in the management of the microwatershed. The proportion of cofinancing will vary with the specific features of each project and the provisions of paragraph h.
 - (vi) The socioeconomic impact of the activities proposed under the project must have been determined. In particular, all projects must show an internal rate of return above 12%, including the costs of assistance, management and administration, and be financially affordable for the farmers.
- g. An analysis will be made of the institutional arrangements and the undertakings with the local authorities and the communities to ensure the sustainability of the measures proposed under the project. It is recommendable to incorporate mechanisms for payment in the rate charged for the water supply for the production of water, duly differentiated from the traditional headings of water offtake, treatment and conveyance. Those receipts may contribute to the establishment of funds for microwatershed management that will guarantee to the extent possible the durability of the projects.
- h. The cost of management and administration financed by the program may not exceed US\$100/per hectare. The government's contributions may be used to finance the following cost items during the first three years after the incorporation of any hectare into the program, up to the ceilings shown:

Ceiling percentages of government share of costs
(equivalents in U.S. dollars)

	System	Labor	Forestry inputs	Other inputs	Technical assistance	Management
1	Forestry	25	100	0	100	100
2	Fuelwood plantations	25	100	0	100	100
3	Guadua bamboo	0	100	0	100	100
4	Biomechanical works for soil conservation	25	100	0	100	100
5	Agroforestry	25 ^{1/}	100	0		
6	Forest grazing	25 ^{1/}	100	0		
7	Revegetation of stream and river banks	25	100	0	100	100

6.2 The amount of the government's contribution per hectare may not exceed US\$400 for forest, fuelwood plantation, agroforestry and forest grazing systems, or be less than US\$200 for biomechanical works, revegetation of stream and river banks, and guadua bamboo plantings.

6.3 For each project a financial plan will be presented indicating the sources and uses of the resources and a plan for recovery of the government's investments, estimated at 20% of the value of the forest products of the systems.

B. Promotion of guadua bamboo

6.4 The project will operate on the basis of forestry extension work, seeking out and supporting communities and farmers willing to participate in its execution.

6.5 It will be executed by the CRQ, which will provide technical assistance, and be reinforced by a program of training for communities and technology transfer. The activities of other entities will be coordinated by the CRQ in their technical aspects, but the budgetary allocations will be made directly by the DNP. There will also be specialized consultancies for determining priority areas, locating and inventorying natural stands of trees, and managing them. Plantings will be of selected seedlings at places where the soils are suitable and facilities for management and extraction are present. The resources of the financing will be

^{1/} From/For purely forest activities.

used to cover the costs of assistance and planting stock, and the farmers will cover the remaining costs.

- 6.6 As an experimental undertaking, this project will be closely monitored and carefully evaluated.

C. Santa Marta Wetlands

- 6.7 This component will be executed by CORPAMAG. The civil works will be contracted for by procedures agreed upon with the IDB. CORPAMAG will coordinate the execution of the other activities with other entities. The CU will supervise the execution of the project and make sure that CORPAMAG's annual budgets include sufficient appropriations for the operation and maintenance of the works. Before the end of the first year of execution a study for the design of a fee on fishery activity in the area will be presented that will guarantee the coverage of these costs, along with an implementation timetable that is consistent with the expenditures for operation and maintenance.

D. Los Nevados National Park

- 6.8 This project will be executed by INDERENA's National Parks Division in the aspects of the control and direct management of the park area and of public information thereon, and by CORPOCALDAS for the research projects. The participation of these entities is governed by the respective agreements.

E. Strengthening of the regional corporations and of the Ministry of the Environment

- 6.9 The CU will be in charge of the performance of studies for the strengthening of the corporations and the National Environmental System, in which it will go by the following procedure: (a) the DNP will contract for the studies on the basis of the terms of reference agreed upon with the Bank; (b) the CU will supervise the studies, with the support of the DEPAC unit of the DNP and the corporations; (c) the final report of each study will be submitted for comment to a panel of experts selected by the DNP; (d) on the basis of the approved final report and with the comments of the panel of experts, a plan of action will be drawn up for implementation of the recommendations of the study considered; (e) DEPAC/DNP or the Ministry of the Environment and the corporations will then carry out the plan of action, and (f) the CU will monitor that execution to ensure that the plan of action, an essential element of the institutional strengthening, is fully carried out.
- 6.10 The staff training activities must include the elements needed for an evaluation of each course, which will be part of a report on the course. The purpose of that report is to determine the utility of

each course and its contribution to the accomplishment of the specific purposes of the program.

- 6.11 To plan these activities properly, the CU will ask the executing units of this component for a *work program* in which the executing units must propose a specific timetable for the execution of the different parts of this component, and state explicitly the goals to be attained in each period.

F. Ministry of Education

- 6.12 The basic education project will be carried out under an agreement between the DNP and the Ministry of Education. This ministry will in turn enter into agreements and contracts with the public and private entities most experienced in the different areas of action. Activities with the various public and private entities at the national, regional and local levels will be coordinated by the Ministry of Education using the mechanisms for the framing of interagency agreements and contracts in accordance with the rules for the primary and secondary education project, the respective costs, and the flow of funds in the years of execution of the program.

G. ICFES

- 6.13 The execution mechanism will be established in an agreement between ICFES and the DNP in which the latter, through the CU, will coordinate and supervise the actions carried out by ICFES under this program. The Academic Office of ICFES will coordinate the activities under the project and appoint a coordinator, who will receive assistance from a representative of the executing agency and an advisory committee of representatives of the institutions participating in the project.
- 6.14 ICFES will coordinate with the universities that will conduct the short courses to select staff of the National Public Environmental System to attend them. A selection committee will be formed consisting of ICFES officers, a representative of the university designated by its rector, and a representative of the project's advisory committee. The academic aspects of each course will be under the direct responsibility and guidance of the university offering it; its results will be evaluated jointly by the university and the project's advisory committee.
- 6.15 The seminars and seminar-workshops will be managed and conducted by the universities and entities offering them. The participants in each event will be selected in concert by the institution responsible for the event and the project coordination office in ICFES. Each seminar will be evaluated by the offering entity, and each seminar-workshop by the responsible institution and the coordination office in ICFES.

- 6.16 Internship opportunities will be announced semiannually to the entities of the National Public Environmental System as they are offered by universities, local entities (mainly municipal governments) and regional autonomous corporations. They will be evaluated by the project's advisory committee on the basis of the reports of the intern and his or her tutor.

H. SENA

- 6.17 The projects will be carried out under an interagency agreement between the DNP and SENA. In this agreement SENA will undertake to give priority to the specific areas in which activities are being carried on under the program, and microwatershed projects in particular. SENA will appoint a national coordinator for the program.

VII. ELEGIBILITY CRITERIA FOR EXECUTING ENTITIES UNDER THE PROGRAM

A. Definition

- 7.1 An executing entity is any public or private entity that gives financial, technical and institutional support to the projects, sponsors and promotes the program, provides technical assistance to beneficiaries, and guides the formulation of and/or executes the works of the projects.
- 7.2 All entities so defined may compete freely for participation in the program if they meet the following general eligibility criteria:

B. Technical criteria

- a. An understanding of the problem and capability for solving it. A good identification of the problem to be solved by the entity responsible for the proposed project, and experience in dealing with situations of that type and the results obtained, will be parameters to consider in selecting executing units.
- b. Technical personnel on the staff or on contract in accordance with the requirements established in the policy criteria of the program and for projects in their specialty.
- c. Capability to offer specialized technical assistance at the level and of the intensity and quality required by the program.
- d. Working experience and methods that guarantee proper direction and guidance in execution of the projects.
- e. Mechanisms for monitoring and evaluating the activities to be carried on, satisfactory to the DNP.

- f. Jurisdiction to engage in operations relating to the program and in the areas in which they are slated for execution.
- g. Institutional status capable of securing agreements among the different institutions involved. Account will be taken of past performance in this regard and of the strategies proposed for arranging such concerted action. A capability to make institutional arrangements for carrying out measures in new microwatershed projects. An assessment must be made of the operational, personnel and logistical implications for the entity or entities directly involved in the project, of launching operations in new areas or microwatersheds. An evaluation will be made of the entity's coordination with the municipal technical assistance units (UMATAs) under the project.
- h. For microwatersheds for which monitoring and inspection systems have been provided, an assessment will be made of the capability of the entity responsible for the project to monitor and evaluate its activities based on the proposed indicators and verifiers. In addition, it will be required that associations benefiting from the project participate in supervision by members of the local population.

C. Administrative and legal criteria

- a. The entity must be constituted in accordance with the legal requirements for entities of its type (public or private).
- b. It must show that it is experienced and possesses an efficient administrative organization.
- c. It must present indicators of administrative and operational performance in keeping with the purposes and needs of the program.
- d. It must operate by methods and standards in keeping with the needs of the projects and satisfactory to the DNP.
- e. It must possess adequate logistical and administrative support for execution of the contracts.

D. Financial criteria

- a. The entity must show evidence of an efficient financial organization.
- b. It must present indicators of financial performance in keeping with the needs for execution of the contracts, based on accounting and financial statements duly audited by competent authorities.

- c. It must possess documentary proof of the availability of the cofinancing resources required by the projects of the program at levels satisfactory to the coordinating unit.

VIII. SUPERVISION AND MONITORING OF THE PROGRAM

A. Monitoring of the program

- 8.1 The coordinating unit will set up a system for monitoring the program. During execution of the program each executing entity must prepare semiannual progress reports describing in detail the physical and financial aspects of execution of the projects and the problems encountered in attaining the set goals.
- 8.2 This activity will be associated with the component of institutional strengthening of the corporations, which includes the establishment of a system for monitoring the microwatershed projects and other specific components.

B. Impact assessment

- 8.3 When execution of the program begins, a baseline diagnosis will be made for comparison purposes in the ex post evaluation of the impact of the program when its execution has been completed. The institutional support component includes resources for carrying out the impact assessment.
- 8.4 In addition, at the end of the second year of the program a mid-term evaluation will be made to measure the response to the investments of the first years and identify the problems encountered, so that any needed adjustments may be made in the execution of the program. The mid-term evaluation will also make it possible to specify in greater detail the actions scheduled for the years to follow.

C. Accounting and auditing

- 8.5 The coordinating unit will set up and maintain a consolidated system of financial information on the accounts of the program and of investment projects and support services funded by resources of those projects. Executing agencies will keep separate accounts for projects. The contracts to be entered into by the DNP with the executing entities will spell out their acceptance and use of the required accounting and auditing procedures.
- 8.6 The accounts of each program, the special accounts, and all the complementary financial information, including requests for disbursements from the Bank, will be audited in accordance with the new responsibilities assigned by the National Constitution.

- 8.7 The audited financial statements of the executing agencies must be presented to the coordinating unit 60 days after the close of the fiscal year. The DNP (coordinating unit) will prepare the consolidated financial statements of the program and deliver them to the Office of the Comptroller General before April 1 for the general audit of the program's accounts. The audited consolidated financial statements and the auditor's opinion must reach the Bank by June 30.

D. Reports

- 8.8 The executing entities of the program must present to the DNP (coordinating unit) any technical and financial reports that may be requested to justify the execution of the investments to the Bank.

E. Audited reports

- 8.9 Apart from the audited accounting documents referred to above, the DNP may request that the Office of the Comptroller General of the Republic examine the accounts of any project as it sees fit. This provision will be included in the cofinancing contracts for the execution of projects.

F. Suspension of cofinancing

- 8.10 The DNP may suspend transfers of its cofinancing resources to participating entities whenever any of the following situations arises: (a) unwarranted delay in the fulfillment of any of the contractual obligations, (b) noncompliance with any of the legal or regulatory provisions that govern the agencies' operations, (c) failure on the part of the participating entity to show sufficient technical capacity or to comply with the requirements established in the Operating Regulations, (d) failure of an entity to make the appropriations required for proper execution of the contract, (e) use of resources for a purpose other than that for which they were provided, or (f) determination that an executing entity of the program is not in compliance with the contractually prescribed generally accepted standards of financial auditing.
- 8.11 These provisions will be made a part of the contracts entered into.

ENVIRONMENTAL INVESTMENT SUBPROGRAM

OPERATING REGULATIONS

I. BACKGROUND

- 1.1 The Environmental Investment Subprogram would have the status of an account under the National Environmental Fund (the Fund) and, as such, would follow the approach and general policies of the Fund, as provided in Article 60 of the draft Law Establishing the Ministry of the Environment, and would have its own Operating Regulations for the management of the financings to be executed with its support.
- 1.2 Until the Fund were created and put into operation, the Environmental Investment Subprogram would operate under the National Fund for Development Projects (Fondo Nacional de Proyectos de Desarrollo, or FONADE) subject to these Regulations and within the structure of that institution. Upon approval of the Law Establishing the Ministry of the Environment, and hence upon establishment of the National Environmental Fund, the Environmental Investment Subprogram would be transferred to that fund in the ministry.

II. PURPOSE OF THE ENVIRONMENTAL INVESTMENT SUBPROGRAM

- 2.1 The purpose of this subprogram is to establish a mechanism for the financing of environmental projects that generate public benefits and have emerged on the initiative of local regional authorities, but have a significant impact that justifies nonreimbursable financing by the central government.

III. PROJECT ELIGIBILITY CRITERIA

A. Thematic areas of projects

- 3.1 Projects and studies on the following subjects and in the following areas will be eligible for financing under the Environmental Investment Subprogram:
 - a. Preservation of natural assets: measures in support of municipal and departmental conservation units either in existence or being established, and the preparation of plans for the management of those assets. Support to the preservation of fragile ecosystems and the development of innovative conservation arrangements.
 - b. Management of natural resources: pilot projects that present innovative solutions to problems of the management and use of natural resources in ecologically sensitive areas. Projects for the management of fauna and habitat restoration.

- c. Human environment protection: projects for the monitoring of air and water quality, and characterization of those resources.
- d. Institutional development: support to the establishment and equipping of, and technical assistance to, environmental units and environmental planning offices in municipal, departmental and regional agencies.
- e. Natural disaster prevention: identification of risks of natural disasters that could exert major impacts on ecologically sensitive areas, and measures for monitoring them.
- f. Environmental education: formal and nonformal environmental education programs, and the development of teaching materials.
- g. Prefeasibility and feasibility studies of projects in the above-mentioned areas, and applied research in areas of biology, the management of natural resources, and environmental and natural resources economics.

B. Beneficiaries

- 3.2 The final beneficiaries of the Environmental Investment Subprogram would be the inhabitants of urban centers and rural areas, and agencies with environmental responsibilities.
- 3.3 Financing could be applied for by:
 - a. Local and regional public entities, including departments, municipalities and regional corporations and autonomous public institutions. These entities could associate with one another or support each other for the design and execution of projects with nongovernmental and community organizations.
 - b. INDERENA, in regions where there are no corporations.
 - c. Universities and research centers.

C. Amounts

- 3.4 The amounts financed may range between a minimum equivalent to US\$20,000 and a maximum of US\$750,000.
- 3.5 For the prefeasibility and feasibility studies of specific projects, the amount financed may be up to the equivalent of 5% of the total amount of the project. If the project requires detailed engineering studies (final designs), the amount may run as high as 10%.

D. Financing

- 3.6 Financing for projects will be provided on a nonreimbursable basis.
- 3.7 In all cases the administration of the Fund will require cofinancing of not less than 30% of the total project amount, depending on the financial capacity of the requesting entity and the availability of cofinancing.
- 3.8 The administration of the Fund will make sure to obtain cofinancing averaging 40% of the total amount granted.
- 3.9 The cofinancing may be provided in: (a) money, (b) labor, (c) materials and supplies, and (d) other contributions in kind that are an integral part of the investment in the project. The proportions of the cofinancing mix will be left to the judgment of the subprogram's administrator.

E. Types of investment

- 3.10 Investments to be financed under the Environmental Investment Subprogram, including the cofinancing presented by the applicant, will be used only for: (a) labor for direct execution of the projects, (b) construction, (c) machinery and equipment, (d) vehicles, (e) livestock, (f) materials and supplies, and (g) consulting services relating directly to the project.
- 3.11 The following uses would be barred: (a) interest, (b) land taxes, (c) remuneration of the permanent employees of the applicant or beneficiary entities, (d) the repayment of loans, (e) investments on the financial market, and (f) purchases of land, except with funds of the local counterpart contribution.
- 3.12 In no case may resources of the Fund be used to cover costs that should be met by public or private users for the restoration or repair of environmental damage they have caused.
- 3.13 Procurement of goods and contracting for services will be subject to the rules of the Bank.

F. Duration

- 3.14 Projects presented to the Environmental Investment Subprogram must have a duration of not more than three years.

G. Continuity and monitoring

- 3.15 Projects presented for consideration by the Environmental Investment Subprogram must be such as to maintain unbroken the stream of benefits launched with financing under the program. An applicant must present, together with the investment plan, a program for

maintenance of the project that provides for assumption by the entity of responsibility for its subsequent maintenance and states the source from which that maintenance would be financed.

IV. ADMINISTRATION OF THE ENVIRONMENTAL INVESTMENT SUBPROGRAM

- 4.1 The finances of the Environmental Investment Subprogram would be managed by the National Fund for Development Projects (FONADE) with the technical support of the coordinating unit of the Environmental and Forestry Action Program in the National Planning Department.
- 4.2 In the time leading up to the creation and setting into operation of the Ministry of the Environment, the subprogram would have an advisory committee and an administrator. The advisory committee would consist of: (a) the deputy director of the National Planning Department (DNP), or his representative, who would serve as chairman; (b) the head of the Special Division of Environmental Policies and Corporations (DEPAC); (c) the general manager of INDERENA; (d) a representative of each CORPES; (e) a representative of the environmental NGOs, and (f) a representative of the scientific community. The administrator of the Environmental Investment Subprogram would serve as secretary, and may not vote. The administrator would be stationed in the coordinating unit and be under the head of the DNP.
- 4.3 The principal function of the advisory committee would be to select and prioritize applications for financing for projects and studies presented by the administrator of the Environmental Investment Subprogram in accordance with the present Regulations, and to present them for approval by the executing agency. The approving function would at first be vested in the head of the DNP, and with the transition would pass to the Fund's committee or board of directors.
- 4.4 The administrator of the Environmental Investment Subprogram would be appointed by the director of the DNP. The administrator's principal functions would be: (a) to receive and review applications, (b) to coordinate their evaluation, (c) to present requests for financing to the advisory committee for consideration, and (d) to monitor the progress of projects during their execution. These activities would be carried on with the support of the technical personnel of the coordinating unit and the support of the UDA and DEPAC.
- 4.5 Once a project had been approved, the contracting and processing of disbursements for it would be carried out by FONADE, or its replacement, which would keep separate accounts for the subprogram and present annual financial statements to the executing agency. FONADE's commission would be charged to the project under the provisions in force.

- 4.6 The administrator of the subprogram would construct an annual projection estimating the total amount to be disbursed during the year for the different projects and studies to be financed.
- 4.7 The executing agency would also promote the subprogram, which it would do with the support of the program's coordinating unit and the regional corporations. This function would later be taken over by the Ministry of the Environment following the transfer.
- 4.8 The executing agency could contract with FONADE, or its replacement, for the performance and administration of studies of a complexity to require the hiring of consulting specialists.
- 4.9 When the ministry and Fund were legally established, and the latter in operation, the Environmental Investment Subprogram would be executed by the Ministry of the Environment through the Fund. In addition, individual financings would be selected and prioritized by a committee of representation and characteristics similar to those of the original committee, and whose structure would be presented to the Bank for consideration as one of the documents required for the transfer of the executing agency.

V. OPERATION OF THE ENVIRONMENTAL INVESTMENT SUBPROGRAM

A. Presentation of requests

- 5.1 An applicant will present a proposal for an individual project in accordance with the guidelines framed and using the forms designed by the administrator of the subprogram. The proposal will include a timetable of investments for the entire period, a plan of operations and expenditures for the first year, and any feasibility studies that have been done.
- 5.2 The administrator of the subprogram will make a first review to verify that the project applied for meets the subprogram's eligibility criteria as stated in the present Regulations.
- 5.3 When he has completed his review, the administrator of the subprogram will initiate the evaluation process for the request.

B. Procedures for the evaluation and approval of project requests

- 5.4 The administrator of the subprogram will send the request to the appropriate technical officer in the coordinating unit for evaluation.
- 5.5 When the technical analysis of the request has been completed, the specialists in the coordinating unit will make institutional and financial evaluations of the applicant and the proposal, and then review the economic evaluation. If the project requires evaluation

by a panel of experts, the administration of the subprogram will arrange for it.

- 5.6 If made necessary by the nature of the project, the coordinating unit may introduce criteria additional to those stated below as part of the evaluation process.
- 5.7 If no specialists are available, the head of the coordinating unit will hire consultants and independent panels of experts to evaluate projects. The total cost of these advisory services may not exceed 1% of the total cost of the project considered, and will be financed out of the local counterpart contribution.
- 5.8 The evaluators will present a summary report on each project, with their conclusions, to the administrator of the subprogram.
- 5.9 The administrator of the subprogram will present the results of the evaluations to the advisory committee for the selection and prioritization of projects.
- 5.10 The advisory committee will consider the presented requests at its bimonthly meetings, and will select and prioritize them in light of the criteria set forth in section D, below.
- 5.11 When a request has been approved, a contract will be entered into between the applicant(s) and FONADE, or its successor; this contract will contain a clause providing for the transition period.

C. Evaluation criteria

1. Technical evaluation

- 5.12 The technical evaluation will be guided by the following criteria:
 - a. The orientation and purpose of the project must not run counter to the country's general environmental policies.
 - b. The stated purposes of a project must be reasonably defined for the activities envisaged in it and show the necessary consistency with them.
 - c. The purposes, activities and tasks of the project must be workable and consistent with the inputs of technical personnel, equipment and materials envisaged for it, and it must be verified that the design parameters rest on a sound technical foundation.
 - d. The technologies to be used must be viable.

- e. Execution of the project must not involve excessive technical hazards that could jeopardize the accomplishment of its purposes.
- f. The project must have no undesirable negative impact.
- g. The costs must be within normal limits for similar activities in the country.

2. Institutional and financial evaluation

5.13 The institutional and financial evaluation will determine whether the applicant (the executing agency):

- a. Has sufficient demonstrated experience in the subject or is associated with an institution that does.
- b. Has enough personnel trained to direct and execute the project.
- c. Has a solid financial base that has enabled it to finance similar projects; when the total cost of the proposed project comes to more than US\$0.5 million, an analysis will be done of the financial statements of at least the last two years.
- d. Has had no negative experience in the execution of similar projects.
- e. Has not defaulted on any earlier obligation to the Fund.
- f. Is not involved in any pending legal proceedings which could weaken its institutional and financial base.
- g. Has presented a satisfactory maintenance program.

3. Socioeconomic evaluation

5.14 The economic evaluation will be governed by the following criteria:

- a. The socioeconomic analysis will apply the methods developed by the DNP's project bank for environmental projects. The applicant under the program will prepare the economic evaluation except when the project has to be submitted to a panel of experts for consultation.
- b. In the latter case, the administrator of the subprogram will prepare the questionnaires for the consultation and present them to three experts in the subject; he will attach to the project document a summary of the comments made by the experts and place the completed forms on file. Consultations of experts should preferably be for packages of projects, and the

experts should be asked to rank them in accordance with the criteria that follow.

D. Criteria for prioritization of projects

- 5.15 To be financed by the Environmental Investment Subprogram, a project must satisfy the following criteria:
- a. The technical, socioeconomic, financial and institutional evaluations must all conclude that the project is feasible.
 - b. Evidence must be presented that the applicant is able to cover recurring, operating and maintenance costs.
 - c. Evidence must be presented of: (i) benefits for low-income groups, (ii) direct benefits for women, and (iii) direct community participation in the preparation and execution of the project.
- 5.16 Among the projects that meet the foregoing criteria, priority will be given to those that generate the most public benefits relative to the amount of the financing requested.
- 5.17 The advisory committee of the subprogram will ensure that, when projects are being selected, a proper comparison is made among them.

E. Disbursements

- 5.18 When an application for a project has been approved, FONADE or its successor agency will deposit in a bank account opened for the purpose in the name of the applicant an amount equivalent to the cost of the operations of the first six months, according to the annual operating plan presented. When a project is for a study it shall be subject to FONADE's rules and procedures for the hiring of consultants, or to those of the agency that succeeds to it.
- 5.19 The second disbursement will be made when the applicant has presented vouchers for at least 70% of the expenditures effected and they have been cleared by the inspector or supervisor of the project for review by the administrator of the subprogram.
- 5.20 Disbursements under the subprogram will follow an investment plan that includes the joint disbursement or utilization of the applicant's cofinancing. In no case will the applicant be permitted to make his contribution at the end of execution of the project.
- 5.21 The applicant will be required to keep separate accounts on the project, and when it has been completed must present a complete

accounting, including financial statements, to the administrator of the subprogram.

F. Supervision

- 5.22 Every project must include in its budget the costs of inspection and supervision, which will be carried out by an independent inspector and charged to the resources of the financing. This supervision work and its costs will be proportionate to the size of the project.
- 5.23 Without prejudice to the foregoing, the administrator of the subprogram and/or the specialists in the coordinating unit of the subprogram may make inspection visits to supervise the execution of a project.
- 5.24 The technical officers making such inspections will present a report, with comments on the execution, to the administrator of the subprogram.
- 5.25 When it is found in an inspection that the applicant is not meeting his obligations and/or is using the disbursed funds for other purposes, the administrator of the subprogram may suspend disbursements and call for restitution of the amount disbursed plus interest at commercial rates.
- 5.26 At the discretion of the administrator of the subprogram and/or the specialists in the coordinating unit, a final inspection will be made on completion of the project to verify the results of the project and the reports presented by the inspectors.

VI. GENERAL CLAUSE

- 6.1 No change may be made in these Regulations without the Bank's prior approval.

ENVIRONMENTAL INVESTMENT SUBPROGRAM

OPERATING REGULATIONS

I. BACKGROUND

- 1.1 The Environmental Investment Subprogram would have the status of an account under the National Environmental Fund (the Fund) and, as such, would follow the approach and general policies of the Fund, as provided in Article 60 of the draft Law Establishing the Ministry of the Environment, and would have its own Operating Regulations for the management of the financings to be executed with its support.
- 1.2 Until the Fund were created and put into operation, the Environmental Investment Subprogram would operate under the National Fund for Development Projects (Fondo Nacional de Proyectos de Desarrollo, or FONADE) subject to these Regulations and within the structure of that institution. Upon approval of the Law Establishing the Ministry of the Environment, and hence upon establishment of the National Environmental Fund, the Environmental Investment Subprogram would be transferred to that fund in the ministry.

II. PURPOSE OF THE ENVIRONMENTAL INVESTMENT SUBPROGRAM

- 2.1 The purpose of this subprogram is to establish a mechanism for the financing of environmental projects that generate public benefits and have emerged on the initiative of local regional authorities, but have a significant impact that justifies nonreimbursable financing by the central government.

III. PROJECT ELIGIBILITY CRITERIA

A. Thematic areas of projects

- 3.1 Projects and studies on the following subjects and in the following areas will be eligible for financing under the Environmental Investment Subprogram:
 - a. Preservation of natural assets: measures in support of municipal and departmental conservation units either in existence or being established, and the preparation of plans for the management of those assets. Support to the preservation of fragile ecosystems and the development of innovative conservation arrangements.
 - b. Management of natural resources: pilot projects that present innovative solutions to problems of the management and use of natural resources in ecologically sensitive areas. Projects for the management of fauna and habitat restoration.

- c. Human environment protection: projects for the monitoring of air and water quality, and characterization of those resources.
- d. Institutional development: support to the establishment and equipping of, and technical assistance to, environmental units and environmental planning offices in municipal, departmental and regional agencies.
- e. Natural disaster prevention: identification of risks of natural disasters that could exert major impacts on ecologically sensitive areas, and measures for monitoring them.
- f. Environmental education: formal and nonformal environmental education programs, and the development of teaching materials.
- g. Prefeasibility and feasibility studies of projects in the above-mentioned areas, and applied research in areas of biology, the management of natural resources, and environmental and natural resources economics.

B. Beneficiaries

- 3.2 The final beneficiaries of the Environmental Investment Subprogram would be the inhabitants of urban centers and rural areas, and agencies with environmental responsibilities.
- 3.3 Financing could be applied for by:
 - a. Local and regional public entities, including departments, municipalities and regional corporations and autonomous public institutions. These entities could associate with one another or support each other for the design and execution of projects with nongovernmental and community organizations.
 - b. INDERENA, in regions where there are no corporations.
 - c. Universities and research centers.

C. Amounts

- 3.4 The amounts financed may range between a minimum equivalent to US\$20,000 and a maximum of US\$750,000.
- 3.5 For the prefeasibility and feasibility studies of specific projects, the amount financed may be up to the equivalent of 5% of the total amount of the project. If the project requires detailed engineering studies (final designs), the amount may run as high as 10%.

D. Financing

- 3.6 Financing for projects will be provided on a nonreimbursable basis.
- 3.7 In all cases the administration of the Fund will require cofinancing of not less than 30% of the total project amount, depending on the financial capacity of the requesting entity and the availability of cofinancing.
- 3.8 The administration of the Fund will make sure to obtain cofinancing averaging 40% of the total amount granted.
- 3.9 The cofinancing may be provided in: (a) money, (b) labor, (c) materials and supplies, and (d) other contributions in kind that are an integral part of the investment in the project. The proportions of the cofinancing mix will be left to the judgment of the subprogram's administrator.

E. Types of investment

- 3.10 Investments to be financed under the Environmental Investment Subprogram, including the cofinancing presented by the applicant, will be used only for: (a) labor for direct execution of the projects, (b) construction, (c) machinery and equipment, (d) vehicles, (e) livestock, (f) materials and supplies, and (g) consulting services relating directly to the project.
- 3.11 The following uses would be barred: (a) interest, (b) land taxes, (c) remuneration of the permanent employees of the applicant or beneficiary entities, (d) the repayment of loans, (e) investments on the financial market, and (f) purchases of land, except with funds of the local counterpart contribution.
- 3.12 In no case may resources of the Fund be used to cover costs that should be met by public or private users for the restoration or repair of environmental damage they have caused.
- 3.13 Procurement of goods and contracting for services will be subject to the rules of the Bank.

F. Duration

- 3.14 Projects presented to the Environmental Investment Subprogram must have a duration of not more than three years.

G. Continuity and monitoring

- 3.15 Projects presented for consideration by the Environmental Investment Subprogram must be such as to maintain unbroken the stream of benefits launched with financing under the program. An applicant must present, together with the investment plan, a program for

maintenance of the project that provides for assumption by the entity of responsibility for its subsequent maintenance and states the source from which that maintenance would be financed.

IV. ADMINISTRATION OF THE ENVIRONMENTAL INVESTMENT SUBPROGRAM

- 4.1 The finances of the Environmental Investment Subprogram would be managed by the National Fund for Development Projects (FONADE) with the technical support of the coordinating unit of the Environmental and Forestry Action Program in the National Planning Department.
- 4.2 In the time leading up to the creation and setting into operation of the Ministry of the Environment, the subprogram would have an advisory committee and an administrator. The advisory committee would consist of: (a) the deputy director of the National Planning Department (DNP), or his representative, who would serve as chairman; (b) the head of the Special Division of Environmental Policies and Corporations (DEPAC); (c) the general manager of INDERENA; (d) a representative of each CORPES; (e) a representative of the environmental NGOs, and (f) a representative of the scientific community. The administrator of the Environmental Investment Subprogram would serve as secretary, and may not vote. The administrator would be stationed in the coordinating unit and be under the head of the DNP.
- 4.3 The principal function of the advisory committee would be to select and prioritize applications for financing for projects and studies presented by the administrator of the Environmental Investment Subprogram in accordance with the present Regulations, and to present them for approval by the executing agency. The approving function would at first be vested in the head of the DNP, and with the transition would pass to the Fund's committee or board of directors.
- 4.4 The administrator of the Environmental Investment Subprogram would be appointed by the director of the DNP. The administrator's principal functions would be: (a) to receive and review applications, (b) to coordinate their evaluation, (c) to present requests for financing to the advisory committee for consideration, and (d) to monitor the progress of projects during their execution. These activities would be carried on with the support of the technical personnel of the coordinating unit and the support of the UDA and DEPAC.
- 4.5 Once a project had been approved, the contracting and processing of disbursements for it would be carried out by FONADE, or its replacement, which would keep separate accounts for the subprogram and present annual financial statements to the executing agency. FONADE's commission would be charged to the project under the provisions in force.

- 4.6 The administrator of the subprogram would construct an annual projection estimating the total amount to be disbursed during the year for the different projects and studies to be financed.
- 4.7 The executing agency would also promote the subprogram, which it would do with the support of the program's coordinating unit and the regional corporations. This function would later be taken over by the Ministry of the Environment following the transfer.
- 4.8 The executing agency could contract with FONADE, or its replacement, for the performance and administration of studies of a complexity to require the hiring of consulting specialists.
- 4.9 When the ministry and Fund were legally established, and the latter in operation, the Environmental Investment Subprogram would be executed by the Ministry of the Environment through the Fund. In addition, individual financings would be selected and prioritized by a committee of representation and characteristics similar to those of the original committee, and whose structure would be presented to the Bank for consideration as one of the documents required for the transfer of the executing agency.

V. OPERATION OF THE ENVIRONMENTAL INVESTMENT SUBPROGRAM

A. Presentation of requests

- 5.1 An applicant will present a proposal for an individual project in accordance with the guidelines framed and using the forms designed by the administrator of the subprogram. The proposal will include a timetable of investments for the entire period, a plan of operations and expenditures for the first year, and any feasibility studies that have been done.
- 5.2 The administrator of the subprogram will make a first review to verify that the project applied for meets the subprogram's eligibility criteria as stated in the present Regulations.
- 5.3 When he has completed his review, the administrator of the subprogram will initiate the evaluation process for the request.

B. Procedures for the evaluation and approval of project requests

- 5.4 The administrator of the subprogram will send the request to the appropriate technical officer in the coordinating unit for evaluation.
- 5.5 When the technical analysis of the request has been completed, the specialists in the coordinating unit will make institutional and financial evaluations of the applicant and the proposal, and then review the economic evaluation. If the project requires evaluation

by a panel of experts, the administration of the subprogram will arrange for it.

- 5.6 If made necessary by the nature of the project, the coordinating unit may introduce criteria additional to those stated below as part of the evaluation process.
- 5.7 If no specialists are available, the head of the coordinating unit will hire consultants and independent panels of experts to evaluate projects. The total cost of these advisory services may not exceed 1% of the total cost of the project considered, and will be financed out of the local counterpart contribution.
- 5.8 The evaluators will present a summary report on each project, with their conclusions, to the administrator of the subprogram.
- 5.9 The administrator of the subprogram will present the results of the evaluations to the advisory committee for the selection and prioritization of projects.
- 5.10 The advisory committee will consider the presented requests at its bimonthly meetings, and will select and prioritize them in light of the criteria set forth in section D, below.
- 5.11 When a request has been approved, a contract will be entered into between the applicant(s) and FONADE, or its successor; this contract will contain a clause providing for the transition period.

C. Evaluation criteria

1. Technical evaluation

- 5.12 The technical evaluation will be guided by the following criteria:
 - a. The orientation and purpose of the project must not run counter to the country's general environmental policies.
 - b. The stated purposes of a project must be reasonably defined for the activities envisaged in it and show the necessary consistency with them.
 - c. The purposes, activities and tasks of the project must be workable and consistent with the inputs of technical personnel, equipment and materials envisaged for it, and it must be verified that the design parameters rest on a sound technical foundation.
 - d. The technologies to be used must be viable.

- e. Execution of the project must not involve excessive technical hazards that could jeopardize the accomplishment of its purposes.
- f. The project must have no undesirable negative impact.
- g. The costs must be within normal limits for similar activities in the country.

2. Institutional and financial evaluation

5.13 The institutional and financial evaluation will determine whether the applicant (the executing agency):

- a. Has sufficient demonstrated experience in the subject or is associated with an institution that does.
- b. Has enough personnel trained to direct and execute the project.
- c. Has a solid financial base that has enabled it to finance similar projects; when the total cost of the proposed project comes to more than US\$0.5 million, an analysis will be done of the financial statements of at least the last two years.
- d. Has had no negative experience in the execution of similar projects.
- e. Has not defaulted on any earlier obligation to the Fund.
- f. Is not involved in any pending legal proceedings which could weaken its institutional and financial base.
- g. Has presented a satisfactory maintenance program.

3. Socioeconomic evaluation

5.14 The economic evaluation will be governed by the following criteria:

- a. The socioeconomic analysis will apply the methods developed by the DNP's project bank for environmental projects. The applicant under the program will prepare the economic evaluation except when the project has to be submitted to a panel of experts for consultation.
- b. In the latter case, the administrator of the subprogram will prepare the questionnaires for the consultation and present them to three experts in the subject; he will attach to the project document a summary of the comments made by the experts and place the completed forms on file. Consultations of experts should preferably be for packages of projects, and the

experts should be asked to rank them in accordance with the criteria that follow.

D. Criteria for prioritization of projects

- 5.15 To be financed by the Environmental Investment Subprogram, a project must satisfy the following criteria:
- a. The technical, socioeconomic, financial and institutional evaluations must all conclude that the project is feasible.
 - b. Evidence must be presented that the applicant is able to cover recurring, operating and maintenance costs.
 - c. Evidence must be presented of: (i) benefits for low-income groups, (ii) direct benefits for women, and (iii) direct community participation in the preparation and execution of the project.
- 5.16 Among the projects that meet the foregoing criteria, priority will be given to those that generate the most public benefits relative to the amount of the financing requested.
- 5.17 The advisory committee of the subprogram will ensure that, when projects are being selected, a proper comparison is made among them.

E. Disbursements

- 5.18 When an application for a project has been approved, FONADE or its successor agency will deposit in a bank account opened for the purpose in the name of the applicant an amount equivalent to the cost of the operations of the first six months, according to the annual operating plan presented. When a project is for a study it shall be subject to FONADE's rules and procedures for the hiring of consultants, or to those of the agency that succeeds to it.
- 5.19 The second disbursement will be made when the applicant has presented vouchers for at least 70% of the expenditures effected and they have been cleared by the inspector or supervisor of the project for review by the administrator of the subprogram.
- 5.20 Disbursements under the subprogram will follow an investment plan that includes the joint disbursement or utilization of the applicant's cofinancing. In no case will the applicant be permitted to make his contribution at the end of execution of the project.
- 5.21 The applicant will be required to keep separate accounts on the project, and when it has been completed must present a complete

accounting, including financial statements, to the administrator of the subprogram.

F. Supervision

- 5.22 Every project must include in its budget the costs of inspection and supervision, which will be carried out by an independent inspector and charged to the resources of the financing. This supervision work and its costs will be proportionate to the size of the project.
- 5.23 Without prejudice to the foregoing, the administrator of the subprogram and/or the specialists in the coordinating unit of the subprogram may make inspection visits to supervise the execution of a project.
- 5.24 The technical officers making such inspections will present a report, with comments on the execution, to the administrator of the subprogram.
- 5.25 When it is found in an inspection that the applicant is not meeting his obligations and/or is using the disbursed funds for other purposes, the administrator of the subprogram may suspend disbursements and call for restitution of the amount disbursed plus interest at commercial rates.
- 5.26 At the discretion of the administrator of the subprogram and/or the specialists in the coordinating unit, a final inspection will be made on completion of the project to verify the results of the project and the reports presented by the inspectors.

VI. GENERAL CLAUSE

- 6.1 No change may be made in these Regulations without the Bank's prior approval.

SENATE OF THE REPUBLIC OF COLOMBIA
STANDING CONSTITUTIONAL COMMITTEE V
ESTABLISHMENT OF THE MINISTRY OF THE
ENVIRONMENT

TEXT APPROVED IN FIRST DEBATE FOR
BILLS OF LAW Nos. 99 AND 129 OF 1992

Creating the Ministry of the Environment, reordering the public sector charged with the management and preservation of the environment and renewable natural resources, organizing the National Environmental System (SINA), and enacting other provisions.

THE CONGRESS OF COLOMBIA

DECREES:

TITLE I

FOUNDATIONS OF COLOMBIAN ENVIRONMENTAL POLICY

ARTICLE 1. General environmental principles. Colombia's environmental policy shall be governed by the following general principles:

1. Priority must be given to protection of the country's biodiversity as a patrimony of the country and the world.
2. The population, its growth, and land settlement must be defined and coordinated with a view to equilibrium between the natural and man-made environments.
3. The function of the production and supply of water in upland plateau and mountain areas, as also in groundwater, shall always take precedence over other possible economic uses.

4. In the utilization of water resources, human consumption shall have priority over any other use.
5. For purposes of the protection and recovery of the environment in the country, the governing principle shall always be that "the polluter pays."
6. The landscape must be protected as the patrimony of all.
7. Disaster prevention shall be a concern of all, and compliance with measures enacted to avert or mitigate their effects shall be mandatory.
8. Environmental policies shall be framed on the basis of the findings of scientific research.
9. Action to protect and restore the environment in the country is a joint undertaking between the State, the community, nongovernmental environmental organizations, and the private sector. The State shall support and encourage the formation of nongovernmental organizations for protection of the environment and may delegate management and surveillance functions to them.
10. Environmental laws and policies shall be unified and articulated for consistency so as to render them easier to understand and observe.
11. Environmental laws and policies shall be based on realistic criteria and considerations and must provide mechanisms for their effective application.
12. The primary instrument on which to base decisions on the construction of works and the conduct of activities that may significantly affect the natural or man-made environment shall be the environmental impact study.
13. For the management of the country's environmental affairs there is established a National Environmental System (SINA), whose components and their interrelations define the mechanisms for action by the State and civil society.
14. Pursuant to articles 1 and 313 of the National Constitution, the environmental management of the country shall be decentralized, democratic and participative, with territorial autonomy.
15. The environmental institutions of the State shall be structured on the basis of criteria geared to integral management of the environment, tied in to the economic, social and physical planning processes.

TITLE II

THE MINISTRY OF THE ENVIRONMENT AND THE NATIONAL ENVIRONMENTAL SYSTEM

ARTICLE 2. Creation and purposes of the Ministry of the Environment. The Ministry of the Environment is created as the apex organization for the management of the environment and renewable natural resources, charged with promoting a relationship of respect for and harmony with the environment, and with defining, in the terms of the present law, the policies and regulations that shall govern the recovery, conservation, protection, ordering, management, use and development of the nation's living and abiotic resources in order to ensure sustainable development.

In conjunction with the President of the Republic, the Ministry of the Environment shall frame, with guaranteed opportunities for participation of the community, a national policy on the environment and renewable natural resources that will guarantee the right of all persons to enjoy a wholesome environment and will safeguard the sovereignty and natural resources endowment of the Nation.

The Ministry of the Environment shall coordinate the National Environmental System (SINA), organized in this law, to ensure the adoption and execution of policies, and of their implementing plans, programs and projects, so as to guarantee fulfillment of the rights and duties of the State and the individual in relation to the environment and to the natural heritage of the Nation.

ARTICLE 3. Sustainable development. Sustainable development is development that leads to economic growth and improvement of the quality of life and welfare of the population without depleting the base of renewable natural resources that sustains it, injuring the environment, or impairing the right of future generations to draw on it for the satisfaction of their own needs.

ARTICLE 4. National Environmental System (SINA). The National Environmental System (SINA) is the body of guidelines, policies, standards, resources and institutions that make it possible to implement the general environmental principles contained in this law. It shall have the following components:

- 1) The general principles and guidelines contained in the National Constitution and in the present law and environmental regulations and standards issued thereunder.
- 2) The specific provisions in force at present and those developed under this law.

- 3) The State entities responsible for environmental policy and action, referred to in this law.
- 4) The community and nongovernmental organizations concerned with problems of the environment.
- 5) The monetary resources for the management and recovery of the environment and the sources thereof.
- 6) The organizations charged with public information and research on the environment.

The national government shall enact regulations for the organization and functioning of the National Environmental System (SINA).

ARTICLE 5. Functions. The Ministry of the Environment shall:

- 1) Frame the national policy on the environment and renewable natural resources and establish rules and criteria for environmental planning of the use of the land and the adjacent seas, to ensure the sustainable utilization of living and abiotic resources.
- 2) Regulate the general conditions for cleaning up the environment and for the use, management, development, preservation, restoration and recovery of natural resources so as to prevent, curb, or eliminate, or mitigate the impact of, activities that pollute, degrade or destroy the nation's natural resource endowment.
- 3) Prepare, with the advice of the National Planning Department, the plans, programs and projects in environmental matters or in connection with renewable natural resources and environmental land-use planning that must be incorporated into the projects of the National Development Plan and the National Investment Plan that the government submits to the Congress for consideration.
- 4) Direct and coordinate the planning and harmonious execution of the environmental activities of the entities comprising the National Environmental System (SINA).
- 5) Establish the environmental criteria to be applied in the framing of sectoral policies and in the planning work of the other ministries and entities.
- 6) Frame, in conjunction with the Ministry of Health, the national policy on population, promote and coordinate with that Ministry programs for the control of population growth, and monitor and evaluate the national population statistics.

- 7) Frame, in conjunction with the Ministry of Economic Development, the national policy on human settlements and urban expansion.
- 8) Evaluate the economic scope and effects of environmental factors, their part in the market value of goods and services and their impact on the development of the national economy and its external sector, their cost in projects for intermediate and large-scale infrastructure, and the economic cost of the degradation and preservation of the environment and renewable natural resources, and carry out economic and fiscal research, analyses and studies of the budgetary and financial resources of the environmental management sector and of its related taxes, fees, levies, duties, fines and incentives.
- 9) Adopt, in conjunction with the Ministry of Education, the plans and programs of instruction to be carried out and the material to be taught at the different levels of education in the country on the subject of the environment and renewable natural resources, promote with that Ministry programs of public information and nonformal education, and regulate the provision of environmental services.
- 10) Determine the essential minimum of environmental rules and the general regulations on the environment that are to govern urban centers and human settlements, and mining, industrial, transportation and other services that can generate environmental damage directly or indirectly.
- 11) Issue general regulations to control and reduce land, water, sound and air pollution and protect the landscape throughout the country.
- 12) Issue and update the land-use zoning statute for the appropriate regulation of land use and national regulations on the environmental aspects of land use, and set general guidelines for the regulation and management of watersheds and other areas requiring special management.
- 13) Define the execution of programs and projects that the Nation, by itself or in association with other public entities, must carry out to clean up the environment or in connection with the management, utilization, preservation, recovery or protection of renewable natural resources.
- 14) Define and regulate the administrative instruments and the mechanisms needed to prevent and control factors of environmental degradation, and determine the criteria for the environmental assessment, monitoring, and management of economic activities.

15) Evaluate environmental studies and issue, deny or suspend the related environmental licenses in the cases envisaged in Title VIII of the present law. These functions may be delegated to the regional autonomous corporations.

16) Assess and control at its discretion, and selectively as circumstances warrant, whether as a precautionary measure, at the time of execution, or ex post, the environmental degradation that may result from development activities and projects and from the exploration, exploitation, transportation, processing and use of renewable and nonrenewable natural resources, and order the suspension of works and activities as may be required.

17) Contract, whenever necessary for the discharge of its functions, for the performance of research and the monitoring of ecological and environmental processes and the evaluation of environmental impact studies.

18) Set aside tracts for inclusion in the National System of Natural Parks, trace their boundaries, and regulate their use and functions.

19) Administer the lands of the National System of Natural Parks and provide for the protection of the nation's natural heritage and biodiversity and for the preservation of areas of special importance to ecosystems.

20) Coordinate, promote and guide research into the environment and renewable natural resources, set up the Environmental Information System, organize the inventory of the country's biodiversity and genetic resources, and promote research into alternative models of sustainable development.

21) Regulate under the law the obtaining, use, management, research, importation, exportation, and the distribution of and trade in wildlife genetic species and varieties; regulate the importation and exportation of and trade in that genetic stock, establish mechanisms and procedures for control and surveillance, and make provision as necessary for the claiming and crediting of fees and royalties due to the Nation for the use of germ plasm.

22) Participate with the Ministry of Foreign Affairs in framing international policy on environmental matters and devise with that Ministry instruments and procedures for cooperation in the protection of ecosystems in border zones; promote relations with other countries in environmental affairs and multilateral cooperation for the protection of natural resources, and represent the national government in the conclusion of international treaties and conventions on the environment and renewable natural resources; and issue the certificates referred to in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

- 23) Adopt the measures needed to ensure the protection of wildlife, and take such steps as may be necessary to protect vanishing and endangered species.
- 24) Regulate the conservation, preservation, use and management of the environment and renewable natural resources in marine and coastal areas, and coordinate the activities of the entities charged with research in and the protection and management of the marine environment, its living resources, and coasts and beaches; it will also regulate the conditions for the preservation and management of swamps, wetlands, lakes, lagoons and other continental water ecosystems.
- 25) Establish the permissible limits for the emission, discharge, transportation and dumping of substances, products, compounds and any other material that may affect the environment or renewable natural resources; and prohibit, restrict or regulate the manufacture, distribution, use, disposal and dumping of materials that cause degradation of the environment.
- 26) Issue environmental regulations for the distribution and use of chemicals and biological materials used in agriculture.
- 27) Acquire for the National System of Natural Parks and for the cases expressly defined in the present law, properties of private parties and public entities; carry out with the competent authorities the expropriation of properties on grounds of public utility or social interest as defined by law, and impose any easements that may be required.
- 28) Carry a register of nonprofit entities created for the purpose of protecting or collaborating in the protection of the environment and renewable natural resources.
- 29) Set user and compensatory charges and fees for water use referred to in the National Code of Renewable Natural Resources and Environmental Protection (Decree-Law 2811 of 1974), the present law, and amending and amplifying provisions.
- 30) Determine the calculation factors referred to in article 19 of the National Code of Renewable Natural Resources and Environmental Protection as a basis for setting the amounts and rate schedules of the charges established by law.
- 31) Settle differences between entities belonging to the National Environmental System arising out of the performance of their functions, and establish criteria and adopt decisions when disputes arise between them on the application of rules and on policies for the use, management and development of renewable natural resources and the environment.

- 32) Establish mechanisms for the adjustment of activities in the private and public sectors so as to modify technologies and reduce or eliminate pollutants; promote and participate in the formulation of industrial conversion plans linked to the implementation of environmentally sound technologies, and in activities for decontamination, recycling, and reuse of residues.
- 33) Promote, in coordination with the competent and related entities, the carrying out of programs for the replacement of nonrenewable natural resources and for the development of clean energy-generation technologies that do not degrade the environment.
- 34) Define, together with the tourism authorities, tourism regulations and programs that can be implemented in reserve or special management areas, and determine the protected natural areas and assets that may be used for tourism, the rules to which agreements and concessions for this purpose will be subject, and uses compatible with those assets.
- 35) Evaluate, monitor and control ecological risk factors and those that can contribute to the occurrence of natural disasters, and coordinate with other authorities measures for the prevention of emergencies or the spread of their effects.
- 36) Approve the statutes of the regional autonomous corporations and amendments and amplifications thereto.
- 37) Administer the National Environmental Fund (FNA).
- 38) Ensure that the studies, explorations and research of nationals and foreigners into our renewable natural resources respect the nation's sovereignty and the rights of the Colombian nation to its own genetic resources.
- 39) Issue regulations to prevent the manufacture, importation, possession and use of chemical, biological and nuclear weapons, and the introduction into Colombian territory of nuclear or toxic wastes.
- 40) Set, as priorities, the environmental policies for the Colombian Amazon and the Chocó biogeographic area in keeping with world interest in the preservation of those ecosystems.

PARAGRAPH 1. To the extent that activities regulated by the Ministry of the Environment may affect human health, this function shall be exercised in consultation with the Ministry of Health, and with the Ministry of Agriculture when animal or plant health may be at risk.

PARAGRAPH 2. Whenever compatible with its competencies as assigned in the present law, the Ministry of the Environment shall henceforth exercise the other functions for protection of the environment and renewable natural resources hitherto performed by the National Institute of Renewable Natural Resources and the Environment (INDERENA), the Ministry of Agriculture, the Ministry of Health, the Ministry of Mines and Energy, and the National Planning Department.

ARTICLE 6. General competency clause. In addition to the other functions assigned to it in the law or regulations, the Ministry of the Environment shall exercise, in respect of the environment and renewable natural resources, any functions not expressly assigned by the law to another authority.

ARTICLE 7. Environmental land-use planning. For the purposes envisaged in the present law, environmental land-use planning is defined as the function assigned to the State of regulating and guiding the design and planning of the use of the lands and renewable natural resources of the nation in order to guarantee their appropriate exploitation and sustainable development.

ARTICLE 8. Participation in CONPES. The Minister of the Environment shall sit on the National Council on Economic and Social Policy (CONPES), with the right to vote.

ARTICLE 9. Order of precedence. The Ministry of the Environment created by the present law shall follow after the Ministry of Education in order of precedence.

TITLE III

STRUCTURE OF THE MINISTRY OF THE ENVIRONMENT

ARTICLE 10. Administrative structure of the Ministry. The Ministry of the Environment shall have the following basic administrative structure:

- Office of the Minister
 - Cabinet
- Office of the Deputy Minister
 - Office of Economic Analysis

- Office of International Cooperation
 - Office of National Environmental Information
- Office of the General Secretary
 - Legal Office
 - Administrative Division
 - Division of Finance and Budget
 - Personnel Division
- Branches and departments:
 1. Human Settlements and Population
 - 1.1 Urban Environment, Human Settlements and Population
 - 1.2 Environmental Education
 2. Physical Environment
 - 2.1 Water Resources
 - 2.2 Soil Resources
 - 2.3 Subsurface Resources
 - 2.4 Atmosphere, Meteorology and Climate
 - 2.5 Forests
 3. Biological Resources
 - 3.1 Fauna
 - 3.2 Flora
 4. Environmental Land-Use Planning
 - 4.1 Land Zoning and Planning

4.2 Regional Assessment Monitoring and Advisory Services

4.3 Citizen Participation and Community Relations

5. Sectoral Environmental Affairs

5.1 Sectoral Environmental Planning and Evaluation

5.2 Oversight and Monitoring

- Special Administrative Unit of the National System of Natural Parks
- National Environmental Fund (FONAM)

ARTICLE 11. The Minister's Cabinet. Shall consist of the Minister as chairman, and of the Deputy Minister, the General Secretary, who will serve as secretary to the Cabinet, and the Directors-General of the Ministry and the Head of the Special Administrative Unit of the National System of Natural Parks. The principal functions of the Cabinet are to harmonize the work and functions of the different units of the Ministry, recommend decisions to the Minister for adoption, and provide coordination in the framing of policies and issuance of rules for and guidance of the institutional actions of the Ministry and for the performance of its other functions.

ARTICLE 12. Functions of the units of the Ministry. The different units of the Ministry will be assigned their functions by regulations in keeping with their nature and in furtherance of the functions assigned to the Ministry by the present law.

ENVIRONMENTAL IMPACT OF THE PROGRAM

Environmental impact of Subprogram A. Renewable natural resources

The basic objective of the program is to improve environmental quality and protect natural resources. The environmental effects of Subprogram A and its various components are summarized below.

A. Management of microwatersheds

1. Positive impacts

a. Improvements in land use

Colombia has an imbalance in the use of its land. Of the 114.7 million ha that make up the nation's territory, 68% represents land that is suitable for forestry but only 46% of this surface area is used in this way. The microwatersheds under the program, where land use is in conflict for 49% of the area, are in these same circumstances.

To confront this situation, the microwatershed management projects seek to redirect the use of land to purposes for which it is suited in about 60,400 ha by establishing agroforestry and forest grazing systems, protective-productive forests, construction of shelter-belts and other soil conservation works, headwater protection and preservation of the natural forest.

b. Decreasing the rate of deforestation

As a result of incorporating forest lands for agricultural uses and unsustainable utilization due to demand for products, the rate of deforestation has been estimated at 4.4% of the forest cover in the microwatersheds. Promotion of reforestation and production systems that incorporate the forest component will seek to increase the supply of goods from the natural forest. This will make it possible to reduce the pressure on the remaining natural forests in the area of influence of the microwatersheds, which is estimated to include 193,000 ha.

c. Reducing erosion, soil loss and sedimentation

There is currently soil erosion in all of the program's 48 microwatersheds. To reverse this situation, erosive processes will be controlled through biomechanical works on degraded soils, revegetation and biomechanical works to reduce soil erosion.

d. Increasing vegetation and tree coverage

To improve streamflow regulation, the ability to intercept precipitation, and surface runoff, to increase the replenishment of aquifers, control erosion and satisfy the demand for products.

To achieve these benefits, provision is made for direct investments in agroforestry and forest grazing systems in some 7,860 ha, for different types of protective-productive planting on 41,160 ha as well as biomechanical works and revegetation to protect the banks of streams on 11,380 ha.

e. Improving streamflow regulation

Significant variations in the country's hydrological regime, which is characterized by imprecise dry and rainy seasons, result in a deficit in the water supply during some months of the year and excess supply in other months. This leads to problems such as lower levels in reservoirs and floods, especially in the lower and middle reaches of the Magdalena, and droughts such as those in the eastern plains. Appropriate coverage with vegetation, use of land according to its suitability and some environmentally sustainable management practices contribute to water regulation in the basins.

f. Capturing carbon dioxide as part of air pollution control

According to the UNDP, a cubic meter of growth in forest biomass (trunk, roots, branches, etc.) absorbs 0.26 equivalent tons of carbon. Based on this, reforestation and revegetation under the project, with an average annual increase of 20 m³/ha and 4 m³/ha respectively, will fix an average of about 217,000 equivalent tons of carbon per year.

g. Increasing environmental education and training and improving community organization

This component will be directed to farmers who will be directly involved in project activities.

h. Generating environmentally sustainable economic opportunities

It is estimated that the program's microwatershed component will benefit about 40,000 low-income farm families who will see improvement in their occupational possibilities and sustainable generation of income in productive activities on the farm, thereby decreasing the likelihood of migration to urban centers that often lack the capacity to absorb the rural labor force.

1. Favorable changes in soil productivity

The traditional form of agriculture that is commonly practiced is an essentially extractive activity; even when chemical fertilizers are added, this does not offset the loss of fertility due to decreases in organic material content and the resulting decline in the complex bioactivity of the rhizosphere that makes possible the development and productivity of the plants above. The interventions planned in the management of the microwatersheds are directed toward recovering and maintaining soil productivity.

2. Potential negative impacts and mitigating measures

a. Possible erosion due to earthwork in site preparation and construction of biomechanical works

These effects will be mitigated by determining the technical specifications of the works, through specialized advisory services and by publication and dissemination of conservation instructions.

b. Unprotected soils during harvesting of permanent crops

The forest covers that have been designed are of the productive-protective forest type. This means that at harvest time at least 30% of the plant cover will always remain. In addition, it is hoped that the production systems recommended by the program will continue to be applied and thus that the corresponding replanting will be carried out after the permanent crops have been harvested.

3. Presence of risks and mitigating measures

Lack of interest on the part of the community in participating in project actions

It is expected that this situation will be handled through the outreach and community organization measures to be promoted by the regional corporations to increase awareness among the population. In addition, the intervention actions will always be coordinated with the community and the farmers, whose participation will also be individually considered. The process of implementing the microwatershed component, as well as its results, will be subject to follow-up through a monitoring program to be adopted by the corporations in conjunction with the program's coordinating unit and with the participation of the NGOs.

Use of species and technologies that have not been fully validated in the areas of influence

Even when there are validated technological developments, in some areas their application is not widespread. This makes it

worthwhile for the project to promote validation and technological adjustment actions suited to the specific conditions of the regions; this aspect has been provided for in the program.

Changes in climatic conditions and variation in rainfall regime

Supraregional climatic changes and variations such as the Niño phenomenon have an effect on climatic conditions in Colombia. In that many of the microwatershed activities are directly related to climate conditions, this can affect the programs and schedules that have been established. Mitigating measures include selecting species that tolerate seasonal climatic variations and applying technologies consistent with these circumstances.

Contamination of water through use of agrochemicals in nurseries due to inappropriate selection of sites vis-à-vis the proximity of water sources

To overcome this risk, selection of sites for nurseries will be carried out carefully. In addition, the operators will be trained in the handling of these products and the precautions to be taken to avoid problems of contamination.

4. Recovering the lagoon system of the Santa Marta Wetlands

a. Positive impacts

(i) Reestablishing salinity conditions

Starting in 1956 when the Ciénaga-Barranquilla highway was constructed, a process of progressive degradation of the region began when the earthwork for this highway interrupted the flow of water that allowed for the exchange of water between the Magdalena River and the wetlands area through various channels and canals. This situation was later aggravated by the construction of the Palermo-Sitio Nuevo-Remolino-Salamina road with embankments that impeded seasonal flows. As a result, conditions of hypersalinity developed and about 21,000 ha of mangrove forest were lost.

After construction of the hydraulic works, salinity in the lagoon complex, with values between 50 and more than 200 parts per thousand depending on the area and time of year, would show values of between 0 and 50 parts per thousand. The maximum level of salt concentration will be limited to 50 parts per thousand for periods not to exceed two months; this will produce benefits from the recovery of hydrobiological resources.

(ii) Recovering environmental conditions suitable for flora and fauna

This will be achieved through the reopening of channels, the construction of regulation structures to reestablish the salt balance in water, the recovery of 12,000 ha through reseedling, the natural regeneration of 18,000 ha of mangrove forest and the protection of existing mangrove forests. Improvements in the flow of water will allow for revegetation of various species of mangrove at various salinity ranges. 1/

Execution of the component would contribute to conservation of seven species of reptiles, six resident bird species and 23 species of mammals that are at risk of extinction both nationally and worldwide. 2/

(iii) Protection and recovery of flora and fauna of the Isla de Salamanca Natural Park

This represents the coastal mangrove swamps and lagoons that are home to unique estuarine ecosystems of the Colombian Caribbean coast. In addition to the fauna indicated above, the park and the estuarine delta together constitute the most important area in northern South America for the migration of aquatic birds. After the destruction of 50% of the mangrove forests that were the primary producers of the ecosystem, the ecosystem's support was destroyed and the species that were the basis for the area's having been declared a park and sanctuary were left without sustenance or substrate. The project will make possible the renewed presence of more than 26 species of migratory birds that visited the area in the past.

The protection of the wildlife sanctuary will seek to fulfill the original objective of preserving species or sample communities and ecosystems with very special ecological characteristics that are representative of the Colombian coastal region. The project will

-
- 1/ Tolerance of salinity for some mangrove species (*Rhizophora mangle*, *Avicenia germinans*, *Laguncularia racemosa*) varies between 31.9 and 90 parts per thousand in surface waters.
- 2/ Regional species at risk of extinction nationally and worldwide: Reptiles: White and green turtle (*Chelonia mydas*), Hawksbill turtle (*Erectmochelis imbricata*), Loggerhead turtle (*Caretta caretta*), American crocodile (*Crocodylus acutus*), Spectacled caiman (*Caiman crocodilus*). Birds: Fish hawk (*Pandium heliaetus*), Peregrine falcon (*Falco peregrinus*), Black tern (*Sterna nigra*). Mammals: Caribbean manatee (*Thrichechus manatus*), Otter (*Lutra longicaudis*), White-faced capuchin (*Cebus albifrons*), Marmosa (*Marmosa robinsoni*), Jaguar (*Felis onca*), Cougar (*Felis concolor*), and Ocelot (*Felis sp*).

permit preservation of 23,000 ha of the mangrove forest ecosystem that have not as yet been affected by excessive salinity nor been the subject of intervention.

(iv) Recovery of hydrobiological species and increased fishing production in the lagoon complex of the Santa Marta Wetlands

The variable environment (fluctuations in salinity and direction of water flow) of these wetlands governs the feeding behavior and the reproductive cycle of the fish in the area. Changes in this environment have led to variations in the presence of fish species. According to the literature, a total of 49 fish families with 130 species were recorded for the year 1974; these figures decreased to 36 families with 87 species for 1991. ^{3/} This decrease was also evidenced by a drastic reduction in the number of individuals per species. It is estimated that 9.7 tons of fish will be obtained annually per km² of mangrove protected or recovered, including interspersed bodies of water.

(v) Recovery of landscape and increased possibilities for tourism in the region

Recovery of the environmental conditions in the ecoregion will make it possible to modify the desolate vista now seen in 30,000 ha of the mangrove forest that are dead or being destroyed in the Pajalaral complex. It will also make it possible to observe migratory birds again.

(vi) Increased availability of fresh water for consumption by communities in the area

Currently the two palafitte communities or those living within the Pajalaral Swamp travel about 60 km (coming and going) for supplies of fresh water. The project would reduce this distance to 14 km.

(vii) Capture of carbon dioxide as part of the control of atmospheric pollution

With the revegetation of 30,000 ha under the project, the biomass in the ecosystem would increase significantly; considering an average annual increase of 18 m³/ha, this would mean an average of about 140,000 equivalent tons of carbon-fixation annually.

^{3/} Recovery and Management of the Estuarine Delta Complex of the Magdalena River. DNP-PAFC-CORPAMAG. Feasibility study. 1993

b. Potential negative effects and mitigating measures

(i) Earthworks to modify canals and construct works

The reopening of canals would mean moving 2.3 million cubic meters of earth which could, if not correctly located, result in inadequate drainage in the area. The earth will be used to build banks to facilitate the surface movement of water. There is also some experience with using removed earth for vegetable production. In addition, there is collaboration with the cattle ranchers of the Renegado and Aguas Negras Canals regarding disposal of this material.

Negative impacts arising during the ecological rehabilitation works will be avoided and mitigated by including environmental specifications for construction in the bidding documents and construction specifications for the disposal of mud from dredging canals and constructing sewer systems, bridges and other civil works.

(ii) Sediment from the Magdalena River

Data on sedimentation indicate that the total concentration of sediment in suspension is 0.64 kg/m^3 , of which the fraction for sand represents an average value (0.083 kg/m^3). This concentration is independent of the volume of flow of the river. Due to the location of the diversion bottom level, the concentration of silt will be equal to that of the river. To control this, the project provides for construction of sediment traps in each channel to capture fine sand and particles in suspension up to 0.06 mm in diameter, as well as regular maintenance of the canals.

(iii) Possible contamination of water due to construction

Mitigating measures to be carried out include: (i) construction of camps: sanitary systems for collection and final disposal of excreta and wastewater and systems for collection and disposal of solid waste (trash) will be constructed; (ii) placement and maintenance of machinery: troughs will be built for oil changes; the collection of used lubricants and grease traps will be established in the maintenance section; and a special manual of standards will be used for disposing of lubricant cans and packages; and (iii) construction of sewer systems, bridges, etc.: specifications will be established for washing materials and preparing concrete in order to keep solids from entering bodies of waters; design specifications will be established to prevent erosion.

The contractors for construction works must include among their personnel an environmental engineer specializing in control of environmental impacts who will act as advisor and supervisor. This specialist will verify compliance with all environmental specifi-

cations for construction and will be the liaison with the environmental inspection to be carried out by CORPAMAG.

c. Presence of risks and mitigating measures

Lack of interest on the part of the community in participating in project actions

It is expected that this situation will be handled through the outreach and community organization measures promoted by the regional corporation as part of its plans for increasing awareness and collaborating with the population.

Control of physical, chemical and biological parameters that are favorable for biotic recovery of the lagoon complex

There are plans for technical assistance, training and applied research. In addition, a monitoring system will be installed; some of its activities have been started. CORPAMAG, with assistance from GTZ, has designed a network of monitoring stations. The monitoring network that has been designed will make it possible to obtain data for operation and ex post evaluation.

Variation in the rainfall regime and existence of flooding

With the modification of canals, there are plans to construct floodgates and structures to regulate the passage of water. The Magdalena River has been hydrologically characterized in the Calamar-Bocas de Ceniza sector (with historical records for 50 years) and for design purposes the volume for which overflowing begins was considered to be that for which the level of its backwater curve coincides with the profile of the flood plain. The condition created with the design makes it possible to simulate flows of floods and to divert the volumes needed in response to the natural cycle by operating the gates of the intake works, without putting the structures or the canals at risk, even at peak periods. As additional security, the troughs and other intake structures will be located on the left side of the embankment of the highway constructed on the right bank of the Magdalena River.

Uncertainty about achieving adequate levels of salinity

Under the original natural conditions, the lagoon complex was subject to a hydrological regime with an annual cycle of fresh water entering from the rivers during the rainy season followed by salt water entering from the sea during the dry season. These alternating flows "cleaned" the system and allowed for the entry and exit of migratory fish species that were adapted to these cycles. The basic principle for resolving the problems of the lagoon complex has been to reestablish the hydrodynamic balance of

the system by operating a hydraulic scheme that makes it possible to control water and salt.

The operation of the hydraulic scheme will be assisted by the calibration and application of a simulation model of the salinity conditions to be achieved in the lagoon complex under different conditions of fresh water flowing from the Magdalena River toward the wetlands area, taking into consideration variations in this flow as a function of the cycle of tides.

Uncertainty regarding biotic aspects

Despite the fact that the reestablishment of the natural dynamics of the water flow, supplemented by mangrove reforestation activities, is considered to be the best insurance for recovering the productivity of the wetlands, the process will be carefully controlled through application of the Monitoring Plan which considers physical, chemical, biotic and social parameters such as: salinity, temperature, dissolved oxygen, and turbidity; pH range; oxidation-reduction; BOD and COD; concentration of nutrients, pesticides, and heavy metals; fecal coliforms; recovery and yield of the mangrove; increases in land vertebrate communities; plankton, nektonic, benthic and fish communities; and yield from artisanal fishing effort. The analysis of this information will provide the necessary feedback for optimal operation of the system.

Pressure of change in land use toward tourism and recreational activities

CORPAMAG, with technical assistance from GTZ, has since 1992 been promoting the development of the PROCIENAGA project which includes regulation of land use. At the end of 1994, plans will be available for the economic and social development of the region and a statute on land use.

5. Los Nevados National Park

(i) Positive impacts

- a. Protection of endemic species, representative of the system of plateaus and snow-capped mountains

In the 58,300 ha that make up the park there are varied fauna, notably the "plateau parakeet" and the hummingbird or "plateau chivito," frogs and toads, and pudu as endemic species. 4/

- b. Recovery of vanishing species

These species notably include the Andean tapir, the spectacled bear, the pudu, and the Andean condor.

- c. Protection of a number of water sources supplying municipal water supply systems, irrigation systems and agroindustrial demand

Feeds watersheds in the departments of Quindío, Risaralda and Caldas, whose waters supply 37 municipalities and more than 2 million people.

- d. Instillment of knowledge for the management of these protected ecosystems

- e. Increase in basic knowledge of the ecosystems of the park to support its management

This will be developed through studies and inventories of flora and fauna and the ecology of unique species such as the high altitude wax palm.

(ii) Potential negative impacts and mitigating measures

- a. Possible alterations caused by construction of infra-structures for administration of the park

To avoid this, the proposed designs are consistent with the natural conditions of the area and have a minimal impact on the area.

- b. The flow of visitors who are ignorant of ecotourism can cause contamination, alteration of the ecosystem, and deterioration of habitats

4/ Parakeet (*Bolborhynchus ferrugineifrons*), plateau chivito (*Oxypogon guerinii*), frogs (*Osornophryne percrasa* and *Eleuterodactylus sp*), small toads (*Atelopus sp*), pudu (*Pudu mephistopheles*), Andean tapir (*Tapirus pinchaque*), spectacled bear (*Tremarctos ornatus*), Andean condor (*Vultur gryphus*).

To mitigate this, there are provisions for restrictions on entry and movement in certain areas, special regulations, training for park personnel, publication of brochures for visitors and the heightening of awareness among the population at large.

Presence of risks and mitigating measures:

Lack of interest of some members of the community in participating in the project

For this, educational programs will be offered to heighten awareness among the population regarding the environmental value of the park.

Risk in reintroduction of fauna

The risk of illegal hunting of animals is being minimized through environmental education and by initially locating the animals in areas with little human access. The species bred in zoos should be transferred to the land at the optimum moment for adjustment to their natural habitat and must be sufficiently developed to survive alone.

5. Development of guadua bamboo

(i) Positive impacts

- a. Protection of stream beds feeding village water systems, by reducing erosion of banks.
- b. Availability of material for construction of houses and structures.

Guadua provides the raw material for hand manufacture of furniture, baskets and other applications that generate family employment that can reduce pressure on exploitation of natural forests as a source of materials for these purposes, causing possible deforestation.

(ii) Negative impacts

- a. Use of fertilizers in areas close to river and stream beds.

To avoid this, it is being suggested that the use of agrochemicals be minimized in establishing guadua plantings and that primarily organic fertilizers be used.

B. Environmental impacts of Subprogram B. Institutional strengthening

1. Strengthening the regional corporations

(i) Positive impacts

- a. Studies on strengthening the environmental institutional management capacity in the country and the region.
- b. Improving the monitoring of environmental quality through specific studies.
- c. Availability of adequate tools for environmental planning and management (environmental information system).
- d. Development and training for officials in the execution of projects to manage and preserve natural resources in the field.

(ii) Negative impacts

No negative environmental impacts are foreseen for the component on strengthening regional corporations.

2. Support for the National Environmental System

(i) Positive impacts

- a. Provide an institutional environmental structure that is operative and suitable to current conditions in the country; strategic planning in the appropriate environmental use of renewable natural resources.
- b. Provide a legal environmental structure that is operative and suitable to current constitutional and administrative changes in the country.
- c. Generate State commitment to environmental protection.
- d. Involve and gain the commitment of community organizations in environmental protection at the national, regional and local level.

(ii) Negative impacts

No potential negative environmental impacts are foreseen from the component on support for the National Environmental System.

3. Environmental education and training

(i) Positive impacts

- a. Raise the level of environmental awareness among technical professionals and field extension agents who are responsible for managing the country's natural resources.

- b. Increase national awareness of conservation and management of natural resources and their importance, from professionals to school children.

(ii) Negative impacts

No potential negative impacts are foreseen.

B. Environmental impacts of Subprogram C. Environmental investments

This subprogram would provide financial resources for projects with strictly positive environmental effects, as indicated in the project selection criteria included in the Operating Regulations for the subprogram.

(i) Positive impacts

- a. Provide financing for projects in the areas of conservation of the nation's natural resource endowment, management of renewable natural resources, prevention of disasters due to ecological degradation, protection of the human environment, institutional environmental development and environmental education.
- b. Provide financial resources and mechanisms to make it possible to decentralize State activities in environmental management and protection for projects of regional and local interest.

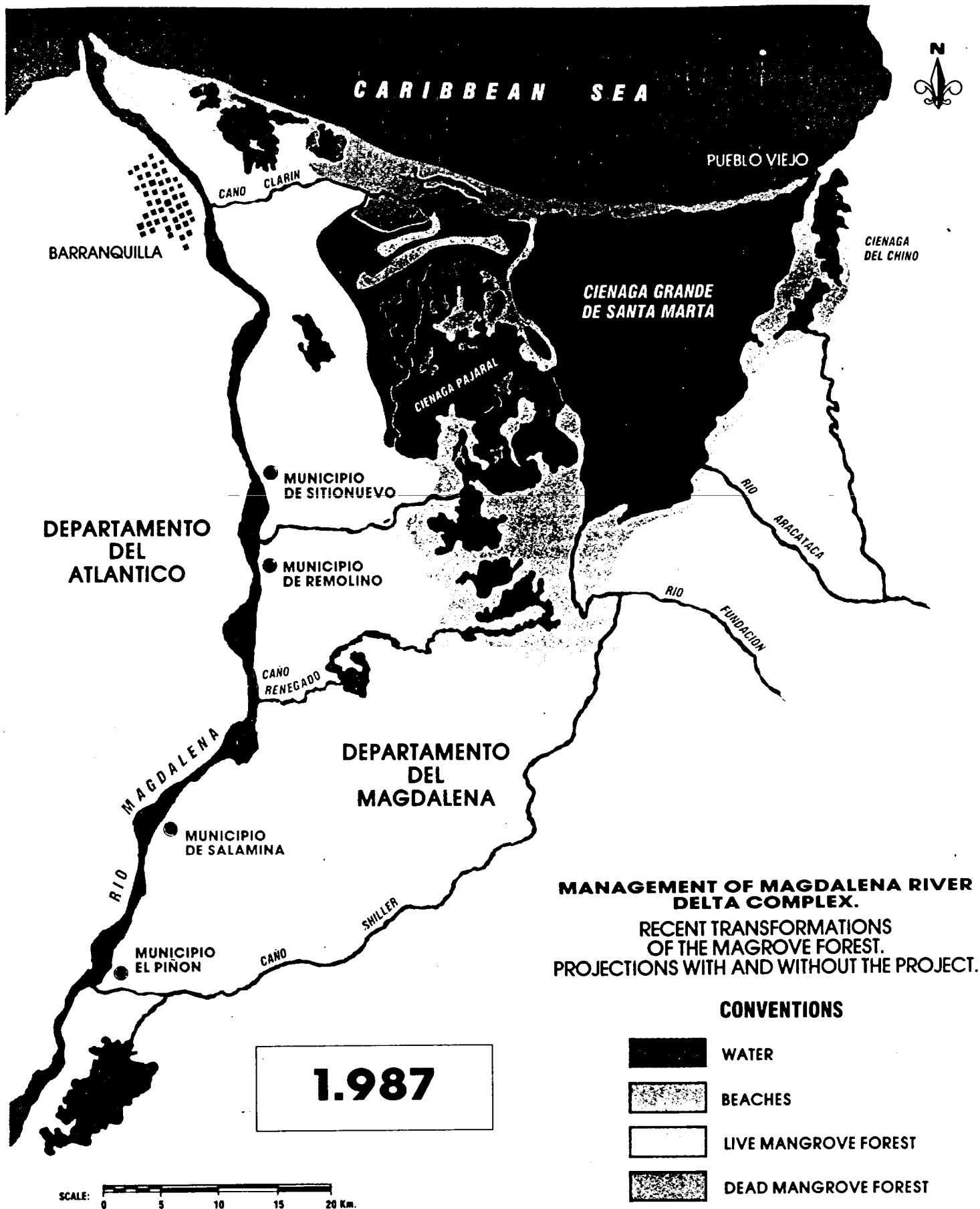
(ii) Potential negative impacts and mitigating measures

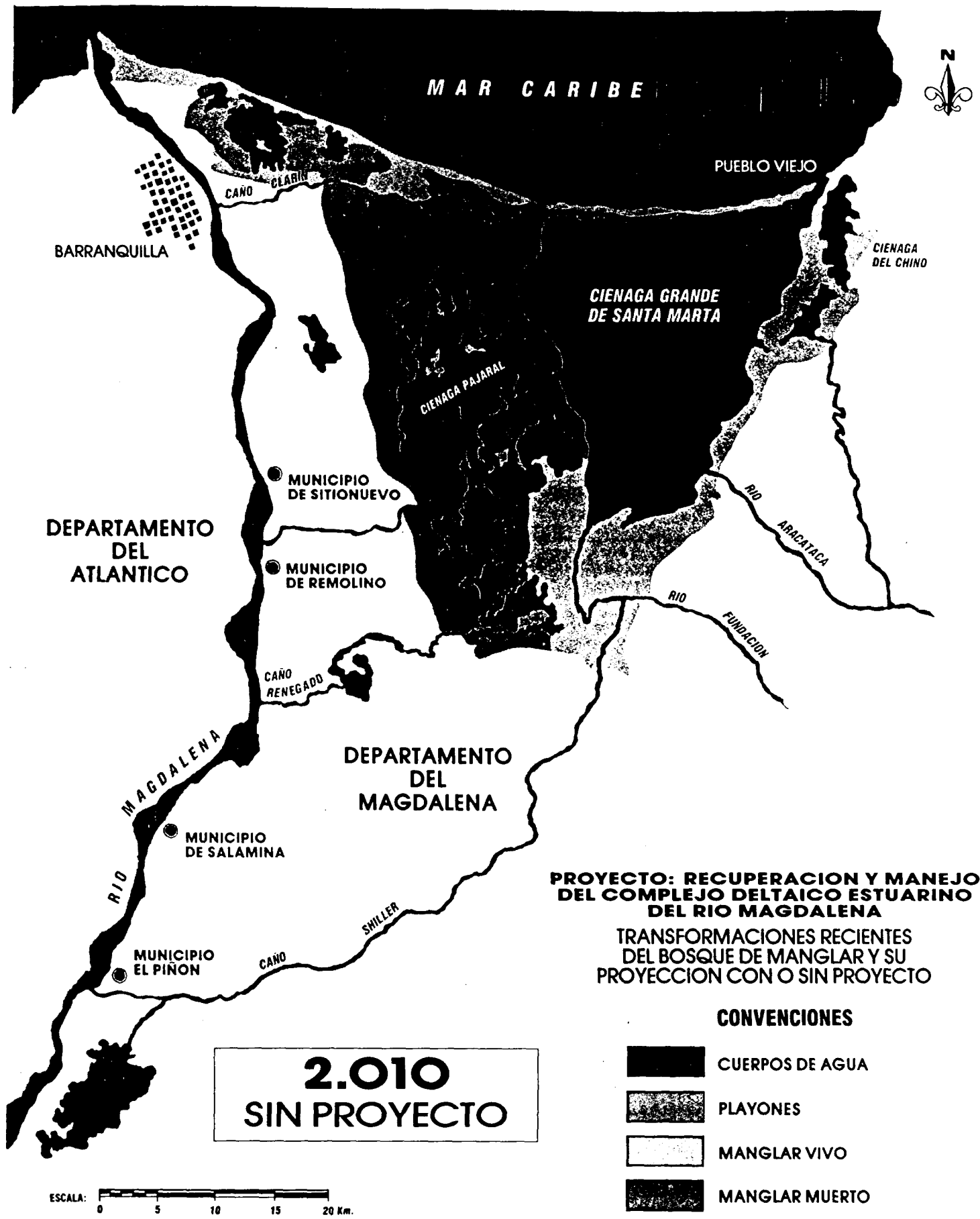
- a. Possibility of selecting inappropriate projects if the criteria for eligibility and evaluation are not applied.

To mitigate this possibility, the Operating Regulations have been designed to include specific and appropriate project selection criteria as well as mechanisms and procedures for monitoring and evaluating projects.

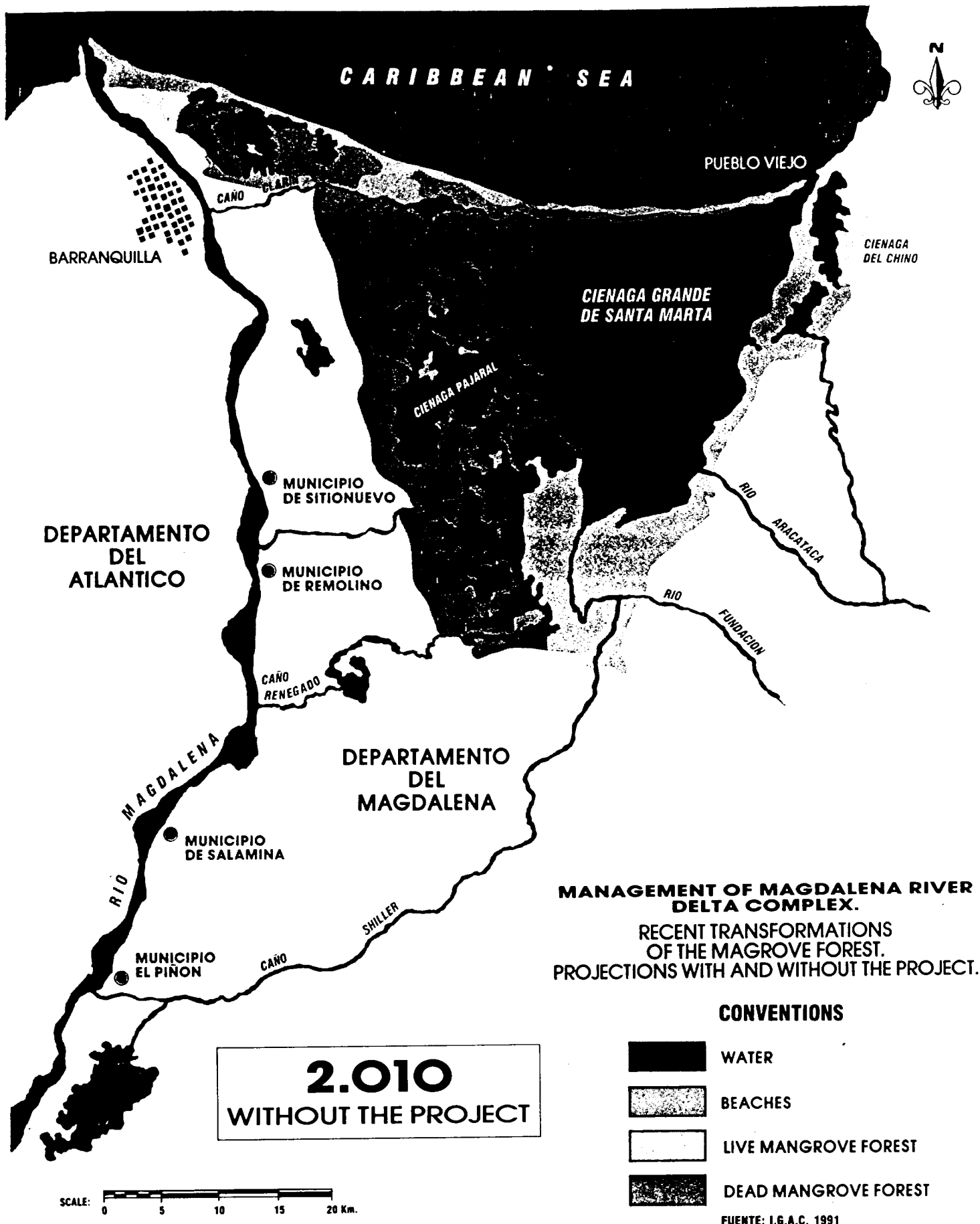
- b. Failure to fulfill commitments on environmental quality of projects on the part of those who carry them out.

This is mitigated through the Operating Regulations which provide eligibility criteria for those who carry out the projects as well as mechanisms to promote monitoring of projects.





Este mapa, preparado por el Banco Interamericano de Desarrollo, no ha sido autorizado por ningún órgano competente y su inclusión en el documento de préstamo tiene por objeto exclusivo indicar el área de influencia del proyecto que se propone financiar.



This map, prepared by the Inter-American Development Bank, has not been approved by any competent authority and its inclusion in the loan document has the exclusive objective of indicating the area of influence of the project proposed for financing.

ECONOMIC ANALYSIS OF SUBPROGRAM A

The following tables show the data used for the economic analysis of the components of microwatershed managements, rehabilitation of the Ciénaga Grande de Santa Marta and the promotion of the cultivation of the guadua.

Y OF ECONOMIC EVALUATION OF MICROBASIN PROJECTS

JECT	AREA (ha)	Pro-P For.	Fuelw.For.	Cer.Vi. Streamb.rev.	Guadua Ref	For.graz.	Agrof.	Bio. Works	Present Value Costs		Proj. IRR	Farm IRR	TRANSF/HA	P.V. EXTE.	%Ext/G.C.	Recovery SdReco
									Farmers	Government						
									Col\$ 000's	Col\$ 000's			Col\$ 000's	Col\$ 000's		Col\$ 000's
-CVC	2925	1600			200			1250	655042	444694	16.6	34.3	152.03	117969	26.5	263766
-CVC	800	300	300		100			100	349160	189364	11.7	20.7	236.73	30948	16.3	94855
-CVC	1200	1000	200						457796	248224	10.1	13.2	206.85	47036.1	18.9	166905
-CVC	2100	400	1100		100			500	683318	463297	12.1	22.1	220.62	69942.6	15.1	242067
CRQ	1103	1103							414603	270240	23	27.1	245.00	150130.4	55.6	503540
RQ	116	116							42345	24711	19.39	23.5	213.03	5226.6	21.2	33001.4
o-CRC	380	380							126708	72714	19.52	23.4	201.96	18223.8	25.1	102066
CDMB	700	350				250	100		585835	206612	17	42.3	295.45	27542.9	13.3	47943
-CDMB	1150	550				550	50		617610	299430	17.6	57.2	260.37	44891.4	15.0	75259
a-Cortol	860		160	150	400		150		558065	189592	26.4	43.5	220.46	31095.2	16.4	247140
-CRC	1640	300	450	250	150		440	50	917271	363890	17.7	25.7	221.86	112585.4	30.9	237557
-Corpon.	1030	600		10			120	300	330457	164743	14.3	16.7	159.94	47207	26.7	130246
	13964	6679	2210	410	950	600	660	2200	5740210	2937731	17.13	29.31	210.06	702620	23.56	2144365.

SS

PROTECTIVE/PRODUCTIVE FOREST																		
	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEAR 11	YEAR 12	YEAR 13	YEAR 14	YEAR 15	YEAR 16	YEAR 17	YEAR 18
PRODUCTION AREA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	320.0	320.0	320.0	320.0	640.0	320.0	320.0	640.0	640.0	320.0	320.0
YIELD m3/Ha								4.8	4.8	4.8	4.8	14.3	24.0	24.0	30.0	30.0	38.0	38.0
PRICE \$/M3								6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
TOTAL	0.0		0.0	0.0	0.0	0.0	0.0	6632.0	6632.0	6632.0	6632.0	54812.0	48080.0	48080.0	115200.0	115200.0	68120.0	68120.0
PRODUCTION AREA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	320.0	320.0	320.0	320.0	640.0	320.0	320.0	640.0	640.0	320.0	320.0
YIELD m3/Ha								4.8	4.8	4.8	4.8	12.8	21.0	21.0	43.5	43.5	66.0	66.0
PRICE \$/M3								16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
TOTAL	0.0		0.0	0.0	0.0	0.0	0.0	23592.0	23592.0	23592.0	23592.0	151072.0	107320.0	107320.0	445440.0	445440.0	337820.0	337820.0
PRODUCTION AREA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	320.0	320.0	320.0	320.0	640.0	320.0	320.0	640.0	640.0	320.0	320.0
YIELD m3/Ha								36.8	36.8	36.8	36.8	24.4	12.0	12.0	12.0	12.0	12.0	12.0
PRICE \$/M3								8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
TOTAL	0.0		0.0	0.0	0.0	0.0	0.0	94208.0	94208.0	94208.0	94208.0	124826.0	30720.0	30720.0	61440.0	61440.0	30720.0	30720.0
PRODUCTION AREA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	320.0	320.0	320.0	320.0	640.0	320.0	320.0	640.0	640.0	320.0	320.0
YIELD m3/Ha								0.0	0.0	0.0	0.0	0.0	3.0	3.0	4.5	4.5	6.0	6.0
PRICE \$/M3								4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
TOTAL	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3840.0	3840.0	11520.0	11520.0	7680.0	7680.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	126592.0	126592.0	126592.0	126592.0	310812.0	188160.0	188160.0	633600.0	633600.0	445440.0	445440.0
WOOD PLANTING																		
	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEAR 11	YEAR 12	YEAR 13	YEAR 14	YEAR 15	YEAR 16	YEAR 17	YEAR 18
PRODUCTION AREA	0.0	0.0	0.0	0.0	0.0	40.0	80.0	120.0	160.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
YIELD m3/Ha						300.0	581.0	682.0	1581.0	1581.0	1581.0	1581.0	1581.0	1581.0	1581.0	1581.0	1581.0	1581.0
PRICE \$/M3						0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
TOTAL	0.0		0.0	0.0	0.0	4800.0	18812.0	42816.0	88804.0	124890.0	124890.0	124890.0	124890.0	124890.0	124890.0	124890.0	124890.0	124890.0
CATTLE WORKS																		

[illegible]

TABLE 5.3
FINANCIAL ANALYSIS OF PROJECT FOR RECOVERY AND MAINTENANCE OF SANTA MARTA SWAMP
(in thousands of US\$)

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEAR 11	YEAR 12	YEAR 13	AÑO 14	YEAR 15	YEAR 16	YEAR 17
MANGROVE AREA 1/ RECOVERED (ha)	670.0	1750.0	3670.0	4630.0	4630.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YIELD Ton/ha 2/ PRICE US\$/Ton 3/ TOTAL 4/	0.063 1.16 48.6	0.125 1.16 224.0	0.186 1.16 665.6	0.250 1.16 1442.8	0.313 1.16 2355.6	0.375 1.16 3666.5	0.438 1.16 4761.4	0.500 1.16 5694.3	0.500 1.16 6656.6	0.500 1.16 7696.0	0.500 1.16 8667.3	0.500 1.16 9603.0	0.500 1.16 10603.0	0.500 1.16 11603.0	0.500 1.16 12603.0	0.500 1.16 13603.0	0.500 1.16 14603.0

reforested with mangrove: 12,000 ha. Area to be recovered: 670/ha year.

correspond to the increase in fishing per mangrove area developed, starting with year one of recovery.

ated that the mangrove area to be reforested and recovered will reach full development in year 8.

fishery output per ton is estimated at US\$1,450 and the fishing effort is US\$250/ton, giving a value of US\$1,160 per ton.

calculated taking into account the year in which each hectare is incorporated (cohort).

PROJECT FOR RECOVERY AND MANAGEMENT OF THE GREAT SANTA MARTA SWAMP

	YEAR 1	YEAR 2	YEAR 3	AÑO 4	YEAR 5	TOTAL	PV(12%)
Hydraulic Works	4247.1	3846.7	1608.4	142.6	142.6	10080.6	8257.3
urchase (Admin)	136.6	132.6	0.0	0.0	0.0	272.4	230.5
onitoring Equipment	250.0	21.4	29.4	29.5	21.5	351.8	282.1
per. & Maintenance Costs	17.7	57.9	43.2	43.2	43.3	185.3	126.6
onervation costs	0.0	134.0	402.0	536.0	536.0	1606.0	1037.7
ation	100.0	96.5	0.0	0.0	0.0	196.5	167.9
ats	131.0	202.1	202.1	202.1	177.9	915.2	651.3
t and equip spec. areas	247.3	156.6	34.5	0.0	30.0	470.4	366.6
ness	78.1	78.1	78.1	78.1	78.2	360.6	261.6
s (7%)*	67.5	60.4	65.3	62.2	62.1	307.5	222.5
	5278.5	4672.3	2454.0	1083.9	1091.6	14790.5	11656.5

clude contingencies for hydraulic works. These are included in initial calculation.

COSTS OF ESTABLISHMENT AND MANAGEMENT OVER USEFUL LIFE OF PROJECT

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	YEAR 11	YEAR 12	YEAR 13	AÑO 14	YEAR 15	YEAR 16	YEAR 17
ST AND MAINTENANCE COSTS	5278.5	4672.3	2454.0	1083.9	1091.6	260.2	260.2	260.2	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0
ODUCTION	48.6	224.0	665.6	1442.8	2355.6	3666.5	4761.4	5694.3	6656.6	7696.0	8667.3	9603.0	10603.0	11603.0	12603.0	13603.0	14603.0
TS	-5229.9	-4946.3	-1766.4	346.6	1463.6	3366.3	4501.2	5914.1	6666.6	7637.0	8306.3	9044.0	9844.0	10644.0	11444.0	12244.0	13044.0
S FROM PRODUCTION	30616.4																
VALUE OF COSTS	12666.3																
IT VALUE	17926.0																
	25.6																
STMENT COSTS 5 YEARS		14790.5															

ent will recover part of the costs through the taxes established in Article 46 of Law 13 of 1990.

fishery industry; amount and payment methods will be determined by the Board of Directors of the INPA.

MM GUADUA PRODUCTION

TING

DONA

Authors

pts:

TS EC

100

FROM

150

RVAI

[illegible][illegible]

PROPOSED RESOLUTION

COLOMBIA. Loan --OC/CO to the Government of Colombia
Environmental Program

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the Government of Colombia, as Borrower, for the purpose of granting it financing to cooperate in the execution of an environmental program, hereinafter referred to as the "Program." This financing shall be subject substantially to the following conditions:

1. Amount and currencies: Up to US\$58,000,000, or its equivalent in other currencies, except that of Colombia, which are part of the ordinary capital resources of the Bank, to pay for goods and services acquired through international competition in the member countries of the Bank and for such other purposes as may be specified in the loan contract. Payments of amortization and interest shall be made in the currency or currencies specified by the Bank, in a quantity equivalent to the corresponding amount owed, calculated in units of accounts in terms of dollars of the United States of America, in accordance with provisions to be included in the loan contract.
2. Source of funds: The ordinary capital resources of the Bank.
3. Guarantee: The general responsibility of the Borrower.
4. Credit fee: 0.75% per annum on the undisbursed portion of the financing, which fee shall commence to accrue 60 days after the date of the contract and payable in dollars of the United States of America on the same dates as the interest.
5. Amortization: The Borrower shall amortize the loan in a period of 25 years from the date of the loan contract, by means of semi-annual, consecutive and, insofar as possible, equal installments. The first installment shall be paid on the first interest payment date, 6 months after the date scheduled for the last disbursement of the financing.
6. Interest: The Borrower shall pay interest semi-annually on the daily outstanding balances of the loan. The first payment shall be made 6 months after the date of the loan contract.

The Bank shall determine the rate of interest to be applied during the life of the loan, in accordance with the lending rate policy of the Bank.

7. Physical initiation and disbursement: The term for physical initiation of all projects shall expire 3 years after the effective date of the loan contract and the term of disbursement of the financing shall expire 5 years after the same date.

8. Special conditions:

- (a) The execution of the Program and the utilization of the resources of the loan shall be carried out in their entirety by the Borrower through the National Planning Department [Departamento Nacional de Planeación] (DNP), hereinafter referred to as the DNP or Executing Agency, with the support of the Coordinating Unit (CU) of the Program, which shall function within the DNP. The Ministry of the Environment [Ministerio del Medio Ambiente] will become the Executing Agency for the Program once it is legally and operationally established. The Executing Agency shall act in coordination with the regional corporations, the Ministry of National Education, the National Learning Department [Servicio Nacional de Aprendizaje] (SENA), the Colombian Institute for Promotion of Higher Education [Instituto Colombiano de Fomento a la Educación Superior] (ICFES), the National Institute of Renewable Natural Resources [Instituto Nacional de los Recursos Naturales Renovables] (INDERENA), and the Financial Fund for Development Projects [Fondo Financiero de Proyectos de Desarrollo] (FONADE), in accordance with the appropriate inter-institutional agreements.
- (b) The resources of the loan, together with the resources of loan ---SF/CO, shall be used to participate in the execution of the Program the total cost of which is estimated at the equivalent of US\$135,000,000. Consequently, the loan shall contain the appropriate provisions to ensure that such additional resources as may be necessary, in addition to the two loans, for the complete execution of the Program shall be duly provided, in an amount estimated at the equivalent of US\$54,000,000, in accordance with the schedule of investments satisfactory to the Bank.
- (c) Prior to the first disbursement of the financing, the Borrower, through the Executing Agency, shall demonstrate to the satisfaction of the Bank: (i) that it has set up the Coordinating Unit (CU) of the Program, under the Director or Subdirector of the DNP, with adequate staff, in accordance with a formula agreed upon with the Bank; and (ii) that the Operating Regulations of Subprograms A and B

and the Operating Regulations of Subprogram C have been approved and put into effect.

(d) Prior to the first disbursement of the resources allocated to Subprogram A, the Borrower, through the Executing Agency, shall submit to the Bank:

- (i) the model of the agreements to be signed with the regional corporations selected for executing projects for microbasin management and promotion of bamboo; and
- (ii) the agreements signed, in accordance with terms agreed upon with the Bank, with: (1) the regional corporations responsible for recovery of the Lagoon System of the Great Santa Marta Swamp; and (2) withINDERENA (through the Parks Department) and the regional corporation responsible for execution of the Los Nevados National Park Management Project.

Said agreements shall indicate, inter alia, that the Borrower, through the Executing Agency, will: (1) transfer the necessary resources of the financing to the above mentioned institutions, so that they may execute the respective projects; and (2) transfer its obligations and powers to the Ministry of the Environment once it begins operating as the Executing Agency for the Program.

(e) Prior to the first disbursement of resources of Subprogram B, the Borrower, through the Executing Agency, shall submit to the Bank the agreements signed, in accordance with terms to be agreed upon with the Bank, with:

- (i) ICFES for execution of the higher environmental education component;
- (ii) SENA for execution of the technical training for extension workers component; and
- (iii) The Ministry of National Education for execution of the environmental education for school children component.

Said agreements shall indicate, inter alia, that the Borrower, through the Executing Agency, will: (1) transfer the necessary resources from the financing for execution of the corresponding Program components; and (2) transfer its obligations and powers to the Ministry of the Environment once it begins operating as the Executing Agency for the Program.

(f) Prior to the first disbursement of the resources of Subprogram C, the Borrower, through the Executing Agency, shall submit to the Bank the agreement signed, in

accordance with the terms agreed upon with the Bank, with FONADE for financial administration of the resources of Subprogram C, based on the Operating Regulations approved by the Bank. Said agreement shall indicate among other provisions, that FONADE shall transfer the financial administration of Subprogram C to the National Environmental Fund within the Ministry of the Environment once it begins operating as the Executing Agency for the Program.

- (g) In the acquisition of machinery, equipment, or other goods for the Program, and in the awarding of contracts of execution of works, the system of public bidding shall be followed in each case in which the value of such acquisitions exceeds the equivalent of US\$250,000 or the value of such contracts for the execution of works exceeds the equivalent of US\$1,000,000. The bidding shall be subject to the procedures to be appended as an annex to the loan contract.
- (h) The Bank shall establish such inspection procedures as it deems necessary to assure the satisfactory execution of the Program, and the Borrower shall extend all cooperation which is required for the most effective accomplishment of this purpose. From the amount of the financing, the sum of US\$580,000 shall be allocated for credit to the general income accounts of the Bank to meet expenses of general inspection and supervision.

PROPOSED RESOLUTION

COLOMBIA. Loan ---SF/CO. To the Government of Colombia.
Environmental Program

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the Government of Colombia, as Borrower, for the purpose of granting it financing to cooperate in the execution of an environmental program, hereinafter referred to as the "Program." This financing shall be subject substantially to the following conditions:

1. Amount and currency: Up to the equivalent of US\$23,000,000 in Colombian pesos which are part of the Bank's Fund for Special Operations to cover local expenses and for such other purposes as may be specified in the loan contract. Payments of amortization and interest shall be made in Colombian pesos.
2. Source of funds: The Fund for Special Operations.
3. Guarantee: The general responsibility of the Borrower.
4. Amortization: The Borrower shall amortize the loan in a period of 30 years from the date of the loan contract, by means of consecutive, semi-annual and, insofar as possible, equal installments. The first installment shall be paid 7-1/2 years after the date of the contract.
5. Interest: 2% per annum, payable semi-annually on principal amounts outstanding. The first payment shall be made 6 months after the date of the loan contract.
6. Physical initiation and disbursement: The term for the physical initiation of all the projects shall expire 3 years after the effective date of the contract and the term for disbursement of the financing shall expire 5 years after the same date.
7. Special conditions:
 - (a) The execution of the Program and the use of the resources of the loan shall be performed in their entirety by the Borrower through the National Planning Department,

[Departamento Nacional de Planeación] (DNP), hereinafter referred to as the DNP or Executing Agency, with the support of the Coordinating Unit (CU) of the Program, which shall function within the DNP. The Ministry of the Environment [Ministerio del Medio Ambiente] will become the Executing Agency for the Program once it is legally and operationally established. The Executing Agency will act in coordination with the regional corporations, the Ministry of National Education, the National Learning Department [Servicio Nacional de Aprendizaje] (SENA), the Colombian Institute for Promotion of Higher Education [Instituto Colombiano de Fomento a la Educación Superior] (ICFES), the National Institute of Renewable Natural Resources [Instituto Nacional de Recursos Naturales Renovables] (INDERENA), and the Financial Fund for Development Projects [Fondo Financiero de Proyectos de Desarrollo] (FONADE), in accordance with the appropriate inter-institutional agreements.

- (b) The resources of the loan, together with those of Loan ---OC/CO, shall be used to participate in the execution of the Program the total cost of which is estimated at the equivalent of US\$135,000,000. Consequently, the loan contract shall contain such provisions as the Bank deems appropriate to ensure that such additional resources as may be necessary, in addition to the two loans, for the complete execution of the Program, shall be duly provided, in an amount estimated in the equivalent of US\$54,000,000, in accordance with a schedule of investments satisfactory to the Bank.
- (c) Prior to the first disbursement of the financing, the Borrower, through the Executing Agency, shall present to the satisfaction of the Bank evidence that: (i) the Coordinating Unit (CU) of the Program has been established under the Director or Subdirector of the DNP, with adequate staff, according to a formula agreed upon with the Bank; and (ii) that the Operating Regulations of Subprograms A and B and the Operating Regulations of Subprogram C have been approved and put into effect.
- (d) Prior to the first disbursement of the resources allocated to Subprogram A, the Borrower, through the Executing Agency, shall submit to the Bank:
 - (i) the model of the agreements to be signed with regional corporations selected for execution of the projects for microbasin management and promotion of bamboo; and
 - (ii) the agreements signed, in accordance with the terms agreed upon with the Bank, with: (1) the regional corporations responsible for recovery of the Lagoon System of the Great Santa Marta Swamp; and (2) INDERENA

(through its Parks Department) and the regional corporation responsible for execution of the Los Nevados National Park Management Project.

Said agreements shall indicate, inter alia, that the Borrower, through the Executing Agency, will: (1) transfer the necessary resources of the financing to the above-mentioned institutions so that they may execute the respective projects; and (2) transfer its obligations and powers to the Ministry of the Environment once it begins operating as the Executing Agency for the Program.

- (e) Prior to the first disbursement of the resources of Subprogram B, the Borrower, through the Executing Agency, shall present to the Bank the agreements signed, in accordance with terms agreed upon with the Bank, with:
 - (i) ICFES for the execution of the higher environmental education component;
 - (ii) SENA for execution of the technical training for extension workers component; and
 - (iii) The Ministry of National Education, for execution of the environmental education for school children component.

Said agreements shall indicate, inter alia, that the Borrower, through the Executing Agency, will: (1) transfer the resources of the financing necessary for execution of the corresponding components of the Program; and (2) transfer its obligations and powers to the Ministry of the Environment once it begins operating as the Executing Agency for the Program.

- (f) Prior to the first disbursement of the resources of Subprogram C, the Borrower, through the Executing Agency, shall present to the Bank the agreement signed, in accordance with terms agreed upon with the Bank, with FONADE, for financial administration of the resources of Subprogram C, based on the Operating Regulations approved by the Bank. Said agreement shall indicate among other provisions, that FONADE shall transfer the financial administration of Subprogram C to the National Environmental Fund within the Ministry of the Environment once it begins operating as the Executing Agency for the Program.
- (g) In the acquisition of machinery, equipment and other goods for the Program, and in the awarding of contracts for execution of works, the system of public bidding shall be followed in each case in which the value of such acquisitions exceeds the equivalent of US\$250,000 or the value of

such contracts for the execution of works exceeds US\$1,000,000. The bidding shall be subject to the procedures to be attached as an annex to the loan contract.

- (h) The Bank shall establish such inspection procedures as it deems necessary to assure the satisfactory execution of the Program and the Borrower shall extend all cooperation which is required for the most effective accomplishment of this purpose. From the financing, the sum of US\$230,000 in Colombian pesos shall be allocated for credit to the general income accounts of the Bank to meet expenses of general inspection and supervision.

RECOMMENDATIONS

- A. It is recommended that the following conditions, to be met to the Bank's satisfaction, be included in the loan contracts, in addition to those set forth in the proposed resolutions:
1. Unless the parties agree otherwise, prior to issuing each call for public bids, or if there is no need for public bids, prior to the acquisition of the goods or the initiation of the works, the Borrower, through the Executing Agency, shall submit for consideration by the Bank: (a) the general plans, specifications, budgets, and other documents needed for the acquisition or construction and, where applicable, the specific requirements and other documents needed for the call for bids; and (b) in the case of works, evidence that it has the legal possession, easements or other pertinent rights to the lands required for their construction and the legal rights to the waters needed for the Program.
 2. Within six months of the entry into force of the law creating the Ministry of the Environment, the Borrower shall submit to the Bank an institutionally viable execution mechanism, and a schedule for implementing it, with appropriate conditions for the uninterrupted continuation of the execution of the Program.
 3. Within six months of the effective date of the loan contracts, the Borrower, through the Executing Agency shall submit to the Bank, the information systems and evaluation methodologies for the reports referred to in paragraphs (b) and (c) of Recommendation A.8 of this appendix.
 4. The Bank may recognize as part of the local counterpart resources of the Program expenditures up to the equivalent of US\$200,000, incurred for the contracting of consulting services in the 18 months preceding the date of the resolution, provided that requirements substantially similar to those set forth in the resolution and in the loan contracts have been fulfilled.
 5. The Borrower, through the Executing Agency, shall submit to the Bank:
 - (a) within 36 months of the effective date of the loan contracts, evidence that it has contracted the administrative, financial and technical consulting services, in accordance with terms of reference accepted by the Bank and the procedures which constitute an annex to the loan contracts, for the institutional strengthening included in Subprogram B; and

- (b) within six months of acceptance by the Borrower and the Bank of each consultant study conducted for the institutional strengthening, a plan and a schedule for application of the recommendations of said studies.
6. The Borrower, through the Executing Agency, shall submit to the Bank, within three months of the effective date of the loan contracts, the operational plan for the first year of execution of the Program, and not later than September 30 of each year, during the execution of the Program, the annual operational plans for the following calendar years, in accordance with the guidelines set forth in paragraph 6.01 of Appendix IV.
 7. The Borrower, through the Executing Agency, shall: (a) assure that the works and equipment involved in the Program will be adequately maintained in accordance with generally accepted technical standards; and (b) submit to the Bank, during the five years following delivery of the works of the Program, and within the first quarter of each calendar year, a report on the maintenance and management status of the works and equipment delivered and forest plantations, as well as the annual maintenance plan for that year, in accordance with the provisions set forth in Section 5.03 of Appendix IV. If the inspections conducted by the Bank, or reports it receives, reveal that actual maintenance is below the agreed-upon levels, the Borrower, through the Executing Agency, shall take the appropriate action to have the deficiencies fully corrected.
 8. The Borrower, through the Executing Agency, shall submit to the Bank for its consideration:
 - (a) at the end of the first, third, fourth and fifth years from the date of the first disbursement of the financing, annual reports on: (i) fulfillment of physical and financial goals of the various activities of the three subprograms, comparing them with the annual work plans; (ii) the results of the programs of technical monitoring of the project for rehabilitation of the Great Santa Marta Swamp and the microbasin projects; and (iii) detailed review of the progress of Subprogram C on Environmental Investments, analyzing the process for evaluation and selection of projects to be financed, the levels of execution and fulfillment of targets of projects financed, prognosis of expected demand in various fields and recommendations as to how the problems encountered could be corrected. The report, to be submitted at the end of the fifth year from the date of the first disbursement of the financing, shall cover the entire Program.
 - (b) within 180 days of the end of the second year of disbursements, a mid-term evaluation report indicating the degree of fulfillment of the objectives and goals of the Program

and the measures suggested for rectifying the problems detected; and

- (c) within 42 months of the final disbursement of the financing, an ex-post evaluation report on the results of the Program, based on the methodology to be agreed upon with the Bank, and the guidelines indicated in paragraph 6.01 of Appendix IV.
- 9. In the case that the bill on the Forestry Incentive Certificate (CIF), currently under study, were approved and the law adopted measures that could result in substantial differences in incentive levels to the beneficiaries of Subprogram A, the Borrower, through the Executing Agency, shall agree with the Bank on the measures needed to regulate the use of the said CIF in a manner consistent with the execution of the Subprogram.
 - 10. Within 12 months from the effective date of the loan contracts, the Borrower, through the Executing Agency, shall submit to the Bank: (a) the method for determining the charge for fishing in the Great Santa Marta Swamp and the appropriate collection mechanism, in order to recover the operation and maintenance costs of the works; and (b) the manner in which the resources collected will be transferred to CORPAMAG.
 - 11. The financial statements of the Program, during its execution, shall be presented annually to the Bank audited by the Comptroller General of the Republic.
- B. The loan contracts shall contain an annex substantially similar to Appendix IV (The Program) to this document.

THE PROGRAM

Annex A to the Loan Contract

I. Objective

- 1.01 The general purpose of the Program is to assist the Borrower in the reversion of the process of the deterioration of natural resources and strengthening the environmental management capacity of the various strata of public administration and community organizations. The Program supports the state's decentralization process, providing financial resources to encourage local initiatives to deal with environmental problems. The Program consists of: (a) execution of activities for environmental rehabilitation and protection of renewable natural resources under the country's environmental policy and the Forestry Action Plan for Colombia (PAFC); (b) strengthening of Colombia's environmental institutional base; and (c) establishment of a program of environmental investments to supplement other public resources allocated to support local environmental-protection initiatives. These actions have been classified under three subprograms: A) Management of Renewable Natural Resources, B) Institutional Strengthening, and C) Environmental Investments.

II. Description of the Subprograms

Subprogram A: Management of Renewable Natural Resources

- 2.01 This Subprogram consists of four components: (1) microbasin management projects; (2) recovery of the lagoon system of the Great Santa Marta Swamp; (3) Los Nevados National Park Management; and (4) support for the program for replanting and promotion of bamboo.

Subprogram B: Institutional Strengthening

- 2.02 The basic targets of this Subprogram are as follows: (a) strengthening of the Program's executing entities through (i) studies, (ii) training and (iii) procurement of computer equipment; (b) courses for professionals in the environmental sector; (c) training of rural extension workers; and (d) environmental education for school children.

Subprogram C: Environmental Investments

- 2.03 The purpose of this Subprogram is to finance environmental studies and projects in support of environmental regulations and policies. Its main aim will be to finance initiatives and requirements of municipal and departmental governments and public regional agencies. These entities could be supported by or join forces with

the nongovernmental organizations (NGOs) and environmental and grassroots organizations, in accordance with the appropriate Operating Regulations for this Subprogram approved by the Bank.

III. Cost of the Program and financing plan

3.01 The estimated cost of the Program is the equivalent of US\$135,000,000 in accordance with the following investment categories and sources of financing:

TOTAL CONSOLIDATED COST BY FINANCING SOURCE (in thousands of US\$)					
INVESTMENT CATEGORIES	FINANCING				
	BANK		LOCAL	TOTAL	%
	CC	FSO			
<u>Engineering and Administration</u>	<u>830</u>	-	<u>3,940</u>	<u>4,770</u>	<u>3.5</u>
Supervision of Works	-	-	1,410	1,410	0.1
Administration	830	-	2,530	3,360	2.4
<u>Direct Costs</u>	<u>5,810</u>	<u>20,000</u>	<u>28,900</u>	<u>54,710</u>	<u>40.5</u>
Civil Works	3,820	6,180	-	10,000	7.4
Machinery and Equipment	970	140	910	2,020	1.4
Vehicles	190	1,360	-	1,550	1.1
Inputs and Materials	830	12,320	-	13,150	9.7
Extension work	-	-	1,530	1,530	1.1
Labor	-	-	20,960	20,960	15.4
Technical Assistance	-	-	5,500	5,500	0.4
<u>Associated costs</u>	<u>20,760</u>	-	<u>3,650</u>	<u>24,410</u>	<u>18.1</u>
Personnel	-	-	210	210	0.1
Studies and Consulting Services	6,520	-	3,140	9,660	7.1
Training	14,240	-	-	14,240	10.6
Land	-	-	300	300	0.2
<u>Environ. Inv.</u>	<u>25,000</u>	-	-	<u>25,000</u>	<u>18.5</u>
<u>Unallocated</u>	<u>5,020</u>	<u>2,770</u>	<u>5,280</u>	<u>13,070</u>	<u>9.7</u>
Phasing	2,170	1,460	1,020	4,650	3.5
Contingencies	2,850	1,310	4,260	8,420	6.2
<u>Financial Costs</u>	<u>580</u>	<u>230</u>	<u>12,230</u>	<u>13,040</u>	<u>9.7</u>
Interest	-	-	11,200	11,200	8.3
Credit Fee	-	-	1,030	1,030	0.7
Inspection and Supervision	580	230	-	810	0.6
TOTAL	58,000	23,000	54,000	135,000	100.0
PERCENTAGES	43.0	17.0	40.0	100.0	

3.02 Estimated cost of the Program, based on the following breakdown into subprograms and components:

TOTAL COST OF PROGRAM BY SUBPROGRAM AND COMPONENT					
Subprogram/Component	BANK		LOCAL	TOTAL	%
	OC	FSO			
A. Renewable Natural Resources	11,170	20,000	24,070	55,240	40.9
1. Microbasin Management	5,720	13,340	18,980	38,040	28.2
2. Recovery of the Great Santa Marta Swamp	4,500	5,730	2,600	12,830	9.5
3. Los Nevados National Park Management	250	930	1,080	2,260	1.7
4. Promotion of Bamboo	700	-	1,410	2,110	1.5
B. Institutional Strengthening	15,400	-	8,480	23,880	17.7
1. Studies on Consulting Services	6,270	-	2,770	9,040	6.7
2. Training	8,530	-	5,710	14,240	10.6
3. Computer Support	600	-	-	600	0.4
C. Environmental Investments	25,000	-	-	25,000	18.5
Administration	830	-	3,940	4,770	3.5
Unallocated	5,020	2,770	5,280	13,070	9.7
Financial Expenses	580	230	12,230	13,040	9.7
TOTAL	56,000	23,000	54,000	135,000	100.0
PERCENTAGE	43.0	17.0	40.0	100.0	

IV. Procedures for procurement and hiring of consulting services

4.01 Procurement

- (a) When goods to be procured or services to be contracted for the Program, including those related to any form of transport or insurance, are to be financed in whole or in part with foreign exchange from the financing, the procedures and specific requirements for the bidding or other form of contracting shall permit the unrestricted participation of goods and services from member countries of the Bank. Consequently, no conditions that may prevent or restrict the offer of goods or the participation of contractors from such countries shall be established in such procedures or specific requirement.
- (b) When sources of credit other than the resources of the financing or the local counterpart are to be used, the Borrower may agree with the creditor upon the procurement procedure to be followed. However, upon the Bank's request, the Borrower shall demonstrate the reasonableness of both the price agreed upon or paid for the purchase of the goods and services, and the financial conditions of the credits. The Borrower shall also demonstrate that the quality of the goods is in conformity with the technical requirements of the Program.
- (c) For the purposes of Section B, 3.18 of Annex B of the loan contract, "Tender Procedures" the system of prequalification or the registry of bidders shall be utilized in tender procedures for the execution of the works on the Great Santa Marta Swamp.

4.02 Consulting Services

- (a) In the selection and contracting of consulting services financed in whole or in part with resources from the Financing:
 - (a) the procedures agreed upon with the Bank shall apply, and
 - (b) no conditions or stipulations may be established that would restrict or prevent the participation of consultants from the Bank's member countries.
- (b) With respect to consulting services financed with resources of the local counterpart, the Bank reserves the right to review and approve, prior to the Borrower proceeding with the corresponding hire, the names and background of the firms or individual consultants selected, the terms of reference, and the agreed fees. This provision does not apply when resources from the complementary financing are used for such contracts.

V. Maintenance

- 5.01 The purpose of the maintenance shall be: (a) to preserve all the works of the Program in the operating conditions in which they were upon completion, at a level compatible with the services they should provide; (b) to maintain the equipment at a level compatible with the services they are required to provide; and (c) to protect the planted and replanted areas so that they may develop appropriately.
- 5.02 The first annual maintenance plan shall correspond to the fiscal year subsequent to that in which the first of the Program works went into operation.
- 5.03 The annual maintenance plan shall include: (a) details of the organization responsible for maintenance, the personnel involved, and the number, type and condition of the maintenance equipment; (b) the location, size, and condition of the repair and storage, and maintenance facilities; (c) information pertaining to the resources to be allocated for maintenance during the current year and the amount to be allocated in the budget during the following year; and (d) a report on the status of maintenance, based on the evaluation system established by the Executing Agency, including the technical measures that would ensure such maintenance.

VI. Data for the Operating Plan and Ex-Post Evaluation

- 6.01 For the purposes of Appendix III, paragraphs 6 and 8, the information to be compiled shall include the following:

(a) For Subprogram A:

- (1) microbasin management: (1) degree to which practices have been adopted and executed; (2) socioeconomic information on the beneficiaries; (3) production, production and maintenance costs, and on-farm revenue;

and (4) hydrological information (flows and sediments at control points) for estimating the projects' impacts away from the farm;

- (ii) recovery of the Great Santa Marta Swamp: (1) development of the main indicators in each of the four monitoring groups: hydrology, mangrove, fishing, and water quality, with special reference to saline levels in the swamp; and (2) information on fish prices in the area and fishing costs;
- (iii) Los Nevados National Park: information on the number of visitors, protection of new species or threatened species based on studies of fauna and flora; updated socioeconomic data; results of education and extension work (changes in production systems) among the affected population groups; and
- (iv) promotion of bamboo: (1) levels of adoption; (2) socioeconomic information on the beneficiaries; (3) production, costs of production and maintenance, and on-farm revenue.

(b) For Subprogram B:

- (i) evaluations made by the students attending the courses to be provided by the Subprogram, concerning relevance, quality of instruction and potential use; and
- (ii) Subsequent evaluation with a sample of students, on the same subjects, a year later.

(c) For Subprogram C:

- (i) record of ex-ante project evaluations;
- (ii) flow of disbursements of the fund and counterpart resources; and
- (iii) ex-post evaluation for a sample of at least 20% of the project from each financing area.

6.02 For purposes of Appendix III, paragraph 8(c), annual comparative information shall be presented starting from the first year of implementation of the Program, and for 36 months following disbursement of the financing, for the same categories as those for the basic initial information.