

SOCIOENVIRONMENTAL AND FORESTRY DEVELOPMENT PROGRAM

(NI-0025)

EXECUTIVE SUMMARY

BORROWER AND GUARANTOR:	Republic of Nicaragua	
EXECUTING AGENCY:	Ministry of the Environment and Natural Resources (MARENA)	
AMOUNT AND SOURCE:	IDB:	US\$15.3 million (FSO)
	Cofinancing:	US\$ 6.0 million
	Local contribution:	<u>US\$ 3.1 million</u>
	Total:	US\$24.4 million
FINANCIAL TERMS AND CONDITIONS:	Repayment period:	40 years
	Grace period:	10 years
	Disbursement period:	5 years
	Interest rate:	variable
	Inspection and supervision:	1%
	Credit fee:	0.5%
COFINANCING I:	SIDA (Swedish government):	US\$1.0 million (grant)
COFINANCING II:	NDF (Nordic Development Fund/loan):	US\$5.0 million
	Repayment period:	40 years
	Grace period:	10 years
	Disbursement period:	5 years
	Interest rate:	0%
	Inspection and supervision:	0.75%
	Credit fee:	0.5%
GENERAL OBJECTIVES:	To promote the sustainable management of natural resources and protected areas and improve the institutional framework for environmental management, which will lead to improvements in the socioeconomic situation and the quality of life of the low-income rural population and those living in extreme poverty (see paragraphs 1.11, 2.1, and 5.32).	
DESCRIPTION:	The project comprises three subprograms: (a) Management and recovery of natural resources through (i) soil conservation, by establishing agroforestry and forest-grazing systems, management of natural forests and multipurpose plantations in basins now suffering degradation, on some 4,700 farms of largely low-income producers; (ii) community development in	

15 indigenous communities in the Waspán area; and (iii) community projects to conserve and establish green belts in 20 municipalities; (b) **Conservation of protected areas**, comprising management plans in five areas with an estimated surface area of 19,000 hectares, and *in situ* environmental monitoring and education in two of these areas, with community participation; and (c) **Institutional strengthening**, in order: (i) to improve the managerial capacity of grassroots rural organizations, municipalities, the National Forestry Commission (CONAFOR), and MARENA; (ii) to support the initiatives in the country to create foundations for the management of protected areas; and (iii) to conduct environmental education campaigns that target farmers, housewives and children on the management and conservation of natural resources, use of appropriate energy-saving techniques (e.g. improved stoves), and contamination by agrochemicals.

**ENVIRONMENTAL
CLASSIFICATION:**

The Environmental Management Committee classified this as a Category III operation and approved the Environmental Summary at its meeting of August 1, 1995.

BENEFITS:

The project will help to establish and consolidate a natural resources management system in the country, by strengthening institutional structures at both national and local levels. By promoting the rational use of natural resources, the program will serve to enhance the economic sustainability of agroforestry activities in the project areas, which will raise the income levels and the quality of life of the low-income population in parts of the country that have the highest poverty indices. It has been determined that most of the direct beneficiaries would be producers with incomes below the IDB poverty threshold (paragraph 5.32). The owners and primary implementers of the project are the producers themselves, and the project will have a substantial impact on production. Improved use of the soil and forests is expected: (i) to slow the rate of deforestation and thereby ease the pressure on the natural forests remaining in the program's areas of influence; (ii) to reduce erosion and sedimentation rates; and (iii) to increase plant and tree cover and thereby improve water resources management in the basins. The project will also help to expand environmental education and training and the organizational capacity of the community.

RISKS:

Investments under the program will be carried out mainly through local grassroots organizations, which are to be strengthened by actions financed by the program. Funds would be transferred to the beneficiaries through local banks on the basis of private contracts with the coexecutors. There is a risk that the producers will not accept the conservationist technologies proposed. This risk will be minimized with the aid of proven practices known to be profitable for growers and through promotion, extension and training programs, and special incentives. Land tenure is another risk factor that could limit the acceptance of conservationist practices. However, it is estimated that 80% of the prospective beneficiaries in the program areas enjoy security of tenure.

**THE BANK'S
STRATEGY IN THE
COUNTRY AND THE
SECTOR:**

The proposed operation is consistent with the guidelines established in the Bank's programming strategy for Nicaragua (country paper, August 1995), namely: (i) to reactivate and increase the efficiency of the agricultural and rural sector; (ii) to reduce poverty and develop human capital; (iii) to promote private sector growth and institutional strengthening; (iv) to lessen the country's financial limitations; and (v) to conserve and recover natural resources.

The program complements other operations which the Bank is supporting to promote sustainable economic and social growth and programs aimed at alleviating the high poverty levels, such as the national rural development program (927/SF-NI), the agricultural sector program (897/SF-NI, 724/OC-NI, 725/OC-NI), the emergency social fund (937/SF-NI), management of the Lake Managua Basin (NI-0027), and the public administration reform program (NI-0085).

PROCUREMENT:

The limits above which procurement under the program is to be carried out by international competitive bidding are US\$350,000 for goods and US\$1.5 million for works (see paragraph 3.35).

**SPECIAL
CONTRACTUAL
CONDITIONS:**

1. Prior to the first disbursement of loan funds, evidence of the following shall be presented to the Bank's satisfaction:
 - a. creation of the Coordinating Unit (CU) of the program as an entity with administrative and financial autonomy, attached to MARENA and governed by its own by-laws, in accordance with wording previously agreed with the Bank, and staffed with the minimum staff agreed

upon with the Bank, including the appointment of its director (see paragraph 3.2);

- b. submission of the draft trust agreement, between the borrower and the principal trust bank, on administration of the funds for the natural resources management and recovery subprogram (see paragraph 3.27);
 - c. approval of the Operating Regulations, which are to include as annexes models of the contracts needed for implementation of the program and the program's monitoring, supervision, and control system (see paragraph 3.9);
 - d. the ministerial decree authorizing the formation of the technical committee and a description of the structure and responsibilities of the local committees in the program's areas of action, in an appropriate manner that will accomplish its objectives and functions agreed with the Bank beforehand (see paragraphs 3.10 and 3.11); and
 - e. formalization of the arrangements with the Ministry of Education for conducting the program's environmental education activities (see paragraph 3.26).
2. The contractual conditions shall also include the submission, to the Bank's satisfaction, of:
- a. an annual report at the end of each year of the program, which shall cover the following aspects: (i) accomplishment of the physical targets and performance indicators of program activities, in relation to the annual plans; (ii) maintenance status of the works completed and the equipment purchased; (iii) analysis of any problems that have occurred, measures adopted to solve them and proposals for the following year; and (iv) a comparison between the budget approved and that executed, and, in the event of discrepancies, an indication of their causes and effects (see paragraph 3.41);
 - b. a mid-term evaluation of the three subprograms within 27 months from the date of the first disbursement of the loan, indicating to what extent the objectives and physical and financial targets have been accomplished, and problems encountered and corrective measures

applied, especially with respect to the institutional framework and community participation in the efficient execution of the program at the local level (see paragraph 3.42);

- c. a report to include a recommendation on the disposition and mechanism for use of reimbursable funding for investment in the natural resource management and recovery subprogram (see paragraph 3.32);
- d. a final report on the program, containing a listing and analysis showing the accomplishment of objectives and the extent to which the development indicators or targets were met, budgeted versus actual cost, major modifications made to the program and their justification, and a summary of procurement under the program (see paragraph 3.42); and
- e. to support private enterprise in the management of Nicaragua's protected areas, the borrower undertakes to submit: (i) within 12 months after the loan contract becomes effective, an initial report and, from then until otherwise agreed with the Bank, annual reports on the progress it has made in establishing one or more foundations for such management; and (ii) within 18 months of the loan contract becoming effective, a draft model agreement for use between the program's Coordinating Unit and any foundations legally created. The agreement would include provisions for the transfer of funds and corresponding obligations with respect to the protected areas subprogram (see paragraph 3.25).

**RECOGNITION OF
EXPENSES:**

The Bank may recognize, as part of the local counterpart funding for the program, expenses for up to the equivalent of US\$300,000 incurred to heighten awareness of the program and to conduct forestation activities (see paragraph 3.39).

I. FRAME OF REFERENCE

A. Background

- 1.1 In 1991, the Government of Nicaragua embarked on a stabilization and structural adjustment program built around a restructuring of the public administration. This program laid the foundations for a market economy and recognized that the country's economic base is essentially dependent on the use of its natural resources.
- 1.2 Political and institutional recognition of environmental problems and their linkages with poverty led the government to prepare, between 1991 and 1993: (a) a strategy of conservation for sustainable development; (b) an environmental land-use planning scheme; (c) an environmental action plan; and (d) a forestry action plan (PAF).
- 1.3 The strategy of conservation for sustainable development and the environmental land-use planning scheme propose investment programs in three areas: (a) production, through programs in forestry development, agricultural production, fisheries and aquaculture, and ecotourism; (b) social, through environmental education, health, and improvements in environmental quality and the quality of life; and (c) other programs on biodiversity, science and technology, and institutional strengthening.
- 1.4 The environmental action plan encompasses policy measures and environmental programs of a legal/institutional and technical nature relating to environmental land-use planning, the agricultural sector and the management of pesticides, the handling of urban waste and solid waste, ethnic and cultural aspects, science and technology, aquatic resources (fisheries), forests, biodiversity, and population. This plan is consistent with the principles of the Earth Summit, UNCED-92, held in Rio de Janeiro, Brazil.
- 1.5 To implement the new policies, the government has carried out a reorganization of the sector, creating the Ministry of the Environment and Natural Resources (MARENA). Its responsibilities are described in Chapter IV. Interinstitutional coordination of the strategies and programs for sustainable management of natural resources and the environment is being carried out through the National Agricultural Commission (CONAGRO) and the National Forestry Commission (CONAFOR).
- 1.6 To implement the strategies, it is vital to have participation by the private sector, especially of grassroots organizations and of nongovernmental organizations (NGOs) that specialize in developing conservation or reforestation programs which benefit farmers or producers. Moreover, a number of municipalities are participating in conservation projects to mitigate problems related to water

shortages, pollution and sedimentation, and others that affect the quality of life of their residents and municipal finances.

B. Status of natural resources and poverty

- 1.7 The country's foremost environmental problem is the deforestation of extensive tracts, at a rate that has been put at 150,000 hectares a year, with its aftermath of erosion, rapid degradation of forests, soils and water, and loss of biodiversity. This situation has been compounded by the displacement of people due to the armed conflicts of the 1980s, the growth of the rural population, the pressure on fragile and marginal land, and inappropriate policies which have encouraged people to push back the frontiers of agriculture.
- 1.8 Studies conducted for this project, and similar ones carried out in Nicaragua and elsewhere in Central America, conclude that traditional cropping practices for basic grains (slash-and-burn) and extensive stockraising on fragile lands are unsustainable. These practices have direct consequences at farm level, where the farmers themselves bear the brunt of soil erosion and deforestation, which show up in the form of declining crop yields, shortages of water, and dwindling wood supplies to meet their energy needs.
- 1.9 Why these farmers persist in inappropriate soil-use practices has been a topic of widespread inquiry. According to the discussions with the communities and the surveys carried out for this project, the main factors identified include: (i) they do not have enough resources of their own, or access to credit to make improvements; (ii) for those who can borrow, market interest rates and short repayment terms force them to intensify their traditional farming in order to pay off their debts, typically by resorting to heavier use of chemicals to offset the loss of fertility in the soil; (iii) they know little about conservationist practices or have not received any technical assistance; and (iv) they see change as fraught with risk in terms of giving up part of their income and subsistence crops. Other critical social factors may include instability of land tenure and low educational levels.
- 1.10 A key factor hampering the switch to new technologies is the extent of rural poverty. World Bank studies suggest that 78% of the population in extreme poverty live in rural areas. The program areas include the poorest rural regions in the country, including Matagalpa, Jinotega, Estelí, Dipilto, and Jicaró. The population of these regions represents only 23% of the total but it includes 46% of those in the extreme poverty category (World Bank, Poverty Assessment for Nicaragua, 1995). Within the regions, the poorest groups are the small farmers, especially those who grow basic grains.

C. Conceptual overview of the program and experience gained

- 1.11 The socioenvironmental and forestry development program addresses two basic elements of the environmental issues currently facing Nicaragua: (a) the deterioration of the environment, as reflected in soil erosion and the rapid loss of natural forestland; and (b) the negative socioeconomic impact of environmental deterioration, which has affected the economy as a whole but has hit the poorest groups particularly hard.
- 1.12 The chief premise of the program is to promote and stimulate the rational use of resources in poor and environmentally degraded rural areas, in such a way that proper soil and forest use on each farm can help to improve the economic status of campesino families and local communities. Rational use of resources is taken to mean switching from extensive stock-raising systems to forest-grazing systems, from unsustainable annual cropping patterns to agroforestry systems, and from indiscriminate felling to improved husbandry and sustainable exploitation of forests.
- 1.13 Experience in similar projects has shown that financial sustainability for farms under conservationist systems is a prerequisite for environmental sustainability. Accordingly, it is the farmers who must own and be responsible for the projects on their farms, from the design stage to the execution of conservation works. The role of the central and local governments should be to provide them with timely technical assistance and appropriate incentives.
- 1.14 Apart from the action to be taken by the producers, project work is needed in the basins, which will require action in a wider context. This means strengthening the managerial capacity of local organizations, municipalities, NGOs, and the central government. The management of protected areas, the formulation of policies and strategies, the monitoring and gathering of information, education and training, among other things, call for top-to-bottom strengthening of the natural resources management system.
- 1.15 The forestry action plan proved an important starting point for identifying programs and projects to get preparation work under way. Initially, 46 investment projects totaling US\$272.3 million were identified. These include activities for the areas chosen for the project using processes based on community participation. This illustrates the magnitude of the problems to be resolved and the demand that exists for projects of this kind. The proposed program would be carried out in the geographical areas suggested by the forestry action plan, chiefly in the Northern Central, Managua, and Carazo area of the Pacific region, where the renewable natural resources are at an advanced stage of deterioration, and in the northeast of the Atlántico Norte Autonomous Region (RAAN), where there are still natural forests standing and the protection and recovery of part of them have already been included in Bank-financed programs (397/SF-NI, 653/SF-NI). Inclusion of the

preselected areas was a result of the initiative and independent action of the local communities, out of concern for the deterioration of natural resources and their own poverty. The Bank has also financed pilot natural resources management projects in these areas, costing US\$445,000 (ATN/JF-4475-NI) and executed by grassroots organizations and NGOs in 1994 and 1995. These projects have confirmed the demand that exists on the part of the producers and have yielded lessons and experience for the design of the program now proposed.

D. The Bank's strategy in the country and actions by other donors

- 1.16 The proposed operation is consistent with the guidelines established by the Eighth General Increase in Resources, in that the project has a powerful social impact in depressed rural areas, is environmentally sound, and aims at financial and economic sustainability for the actions to be undertaken. The project also fits in with the Bank's programming strategy for Nicaragua (country paper, 1995), with its emphasis on resource recovery. This strategy, in keeping with the development strategy of the government, centers around five priority areas: (a) to reactivate and increase the efficiency of the agricultural and rural sector; (b) to reduce poverty and develop human capital; (c) to promote private sector growth and institutional strengthening; (d) to lessen the country's financial limitations; and (e) to conserve and recover natural resources.
- 1.17 In this context, the Bank is supporting operations that promote sustainable economic and social growth and programs aimed at alleviating high levels of poverty, such as the national rural development program (PNDR) (927/SF-NI), the emergency social fund (937/SF-NI), management of the Lake Managua Basin (NI-0027), and the public administration reform program (NI-0085). Development of the program is underpinned by the institutional framework and the agricultural and renewable resources policies embodied in agricultural sector loan (897/SF-NI, 724/OC-NI, 725/OC-NI), approved by the Bank in 1992.
- 1.18 As far as other international agencies are concerned, the Nordic countries have the largest presence in the forestry and environmental sectors, having financed a series of activities and projects in the sector through government agencies and NGOs.
- 1.19 The program areas are the site of so far promising investments in forest plantations funded by the Swedish International Development Authority (SIDA). SIDA is to participate in cofinancing the program. There are also other actions by donors, such as DANIDA, FINIDA, and the Netherlands, which have financed projects in neighboring areas that have provided valuable experience for the design of this program. The United States, through USAID, is financing institutional strengthening programs. Several European countries are funding smaller-scale actions through NGOs (national and

international) and grassroots organizations. The World Bank is preparing a project with activities similar to those of the proposed program but focusing on the Pacific Coast and the Atlántico Sur Autonomous Region (RAAS). The Bank has established contact with the entities mentioned to make sure the various actions complement each other.

II. THE PROGRAM

A. Objectives and anticipated impact of the program

- 2.1 The purpose of the program is to promote the sustainable management of natural resources, conserve protected areas, and improve the institutional framework for environmental management, which will lead to improvements in the socioeconomic situation and the quality of life of the low-income rural population, in particular. The rural communities affected by the program are critically dependent on these resources and are caught up in a vicious circle of poverty and unsustainable use of natural resources (see Annex I-1).
- 2.2 The specific objectives of the program are:
 - a. to improve the management and recovery of soil, forest, and water resources in order to increase productivity, income levels, and the environmental quality of farms and rural and indigenous communities in selected basins;
 - b. to contribute to the establishment and consolidation of protected areas, so as to guarantee the maintenance of delicate and economically promising ecosystems under systems of sound management; and
 - c. to strengthen the managerial capacity of private and public organizations at both local and national levels in the environmental and forestry fields.

B. Subprograms

- 2.3 To meet these objectives, the program comprises three subprograms:
 - a. **Management and recovery of natural resources** through: (i) soil conservation, by establishing agroforestry and forest-grazing systems and multipurpose plantations in basins now suffering degradation, on some 4,700 small and medium-sized farms over a total area of 57,600 hectares; protection and sustainable management of private natural forests on 30,800 hectares; and reforestation on 13,000 hectares of degraded land; (ii) establishment of forests in 15 indigenous communities on 15,000 hectares in the Waspán area (RAAN); and (iii) community projects to conserve and establish green belts in 20 municipalities. The direct cost of this component would amount to US\$15.5 million.
 - b. **Conservation of protected areas**, comprising management plans in five areas with an estimated surface area of 19,000 hectares, and *in situ* environmental monitoring and education in two of these areas, with community participation. The estimated direct cost of this component would be US\$1.2 million.

- c. **Institutional strengthening**, in order: (i) to improve the managerial capacity of municipalities and grassroots organizations, MARENA, and CONAFOR; (ii) to support the creation of foundations for the management of protected areas; and (iii) to conduct environmental education campaigns targeted to farmers, housewives, and children on the management and conservation of natural resources, use of appropriate energy-saving techniques (e.g. improved stoves), and contamination by agrochemicals. The estimated direct cost of this component would be US\$1.55 million.

1. Management and recovery of natural resources

- 2.4 This subprogram is designed to lower levels of environmental deterioration and introduce improved practices for managing natural resources in general, and soil, forests, and water in particular, especially on the part of small farmers.

a. Management and recovery of soil and forests on private farms

- 2.5 The aim of the on-farm investment projects is to set in motion a transition from the current unsustainable, low-yield production systems toward sustainable production systems that conserve the soil and increase the productivity of natural resources. Documents 1 and 3 in the technical files show current and desired soil use in the areas selected.
- 2.6 Activities include extension work and investments in agroforestry and forest-grazing systems, using soil conservation practices, crop rotation, improved pastures, forest management, and reforestation.
- 2.7 Agroforestry projects include targets for establishing crops in combination with trees, minor conservation works, terraces, drainage ditches, hedgelaying, fencing, and improved pastures. The investments in forest-grazing combine stock raising with the planting of forage trees and live hedges. The conservation and management of natural forests include fire-protection programs, plant health, and forest management plans. Forest plantations will be multipurpose and for wood.
- 2.8 The following basins are included in the subprogram: (a) Río Grande de Carazo; (b) the Estelí and Pire rivers; (c) the Dipilto and Jícaro rivers in Las Segovias; (d) the San Francisco and Molino Norte rivers in Matagalpa; (e) Jigüina River in Jinotega; (f) the municipality of San Francisco Libre; (g) the southern Managua Basin; and (h) the communities of Waspán (RAAN). Other basins may be added in accordance with the program's Operating Regulations.

b. Forestry development in indigenous communities

- 2.9 The subprogram incorporates investments in community forestry development in indigenous communities living in extreme poverty. These

communities are facing such problems as indiscriminate felling of forests, forest fires, lack of know-how in product marketing, and an infrastructure plagued by poorly maintained access roads. The programs to be financed include management plans; protection against forest fires, diseases and pests; improvements to existing access roads; training of communities in the production of handicrafts; and sustainable use of natural resources. Forest production will be based on plantings of the Pinus caribea, along the hemisphere's southern conifer boundary (document 4 in the technical files).

c. Municipal conservation works

- 2.10 Special, high-priority conservation works are to be cofinanced in the basins to control streams and stabilize river banks, using biological and mechanical systems, together with the establishment of green belts (document 5 in the technical files). The conservation works will be carried out as a matter of priority in the southern basin of Lake Managua; designs prepared for the Lake Managua Basin management program (NI-0027) are already available for this purpose.

2. Conservation of protected areas

- 2.11 This subprogram is aimed at preserving unique ecosystems and protecting natural resources in areas of influence of program components. The activities to be financed include the demarcation of areas, compilation of a basic land survey, inventories, and management plans for five areas: (a) the Datanli-El Diablo Peaks, Arenal, Frío-La Cumplida and Apante Reserves (with a total area of 5,737 hectares); (b) the Cordillera Dipilto-Jalapa Natural Reserve (6,200 hectares); (c) the Dipilto River-Nueva Segovia demonstration area (900 hectares); (d) the Chococente Wildlife Refuge (4,800 hectares); and (e) Miraflores Peak in the Estelí basin (1,363 hectares).
- 2.12 Funding would also be provided for supervision and oversight, training, environmental education for visitors, and basic infrastructure for supervising areas (d) and (e), where current investment conditions are best thanks to clearly defined land tenure, strong support from the local communities, and the prospects for these areas to be administered by the private sector (document 6 in the technical files).

3. Institutional strengthening

- 2.13 The purpose of this subprogram is to facilitate the strengthening of managerial capacity in environmental and forestry matters at both local and national levels. The component includes: (a) the formulation of environmental and forestry policies and strategies and the management of CONAFOR, with an evaluation of the extent to which the PAF's strategies and targets have been accomplished, and support for forestry regulations; (b) strengthening of MARENA in shaping policies and strategies for protected areas; (c) support

for initiatives to establish private or mixed foundations for protected areas; (d) management plans for four additional basins in the program; and (e) a feasibility study for a second phase of the program. Training activities comprise: (a) strengthening of grassroots and nongovernmental organizations through training in administrative and technical subjects; (b) training of municipalities and regional staff of MARENA in environmental and forestry control; and (c) support for environmental education, with emphasis on women and children in the program areas, which includes, among other things, training in biological controls, a campaign against the use of banned agrochemicals, and hands-on training in the use of improved stoves in the interest of saving energy (document 7 in the technical files).

C. Incentives

- 2.14 To achieve the objectives of the natural resources management and recovery component, the use of incentives is felt to be an important element in motivating, inducing, and allowing technological change on the part of producers. The incentive is seen as direct, targeted, and short-term financial support to enable growers to introduce conservationist practices, the hope being that once the switch is made they will adopt the practices permanently because of the increased earnings they yield. The incentives are similarly felt to be justified by the sizable externalities which these programs involve. In principle, producers need a financing plan to make the changes on their properties. The program would provide the financing, while the producer would provide the labor. Depending on how well the conservation targets had been met in relation to the management plans for the farm, part of the funds made available for soil conservation and forestry inputs would be treated as nonreimbursable incentives. Should producers fail to carry out the conservation works, the full amount financed would be repayable, with interest and penalties if appropriate.
- 2.15 This incentive system would apply to the agroforestry and forest-grazing systems. To promote reforestation in degraded areas, incentives would be passed along through a system of auctions, the primary goal being the efficient allocation of scarce funds. In other words, sums would be awarded as incentives to those producers who offer to establish and maintain areas under reforestation and ask for the smallest amount of funding from the program (see chapter III.C.1.b).

D. Dimensioning

- 2.16 The criteria used in the final dimensioning of the program were: (i) potential and actual demand by producers to participate in the program; and (ii) execution capacity at national and local levels. The diagnoses, community consultations, surveys and pilot projects conducted in parallel with the feasibility study show the importance of sizing the program with a view to carrying out interrelated

extension and training activities focusing on soil conservation, forest management, development of energy-producing and multipurpose plantations, and institutional strengthening, in accordance with the targets stated in the program description (documents 3 to 6 in the technical files).

E. Beneficiaries

- 2.17 Most direct beneficiaries of the program are rural producers and families living in the program areas. It has been estimated that the benefits would extend to about 4,700 low-income growers and their families, in addition to 15 indigenous communities (2,600 families). Indirectly, the population of the basins affected – roughly 360,000 rural inhabitants and a total of 1.4 million persons in the 23 municipalities in the area of influence – would stand to benefit from the program's positive environmental and productive impacts. The country at large would also gain from having a stronger institutional system for managing its natural resources.

F. Costs and financing plan

- 2.18 The direct cost of the program, broken down by investment category, is estimated at US\$24.4 million, as shown in the table below:

COST OF THE PROGRAM

CATEGORIES	TOTAL (in US\$ thousands)					
	FSO	SIDA	NORDIC	LOCAL	TOTAL	% TOTAL
ADMINISTRATION	1,900	0	500	0	2,600	10.7
Coordinating unit	1,620	0	0	0	1,620	6.6
Promotion	200	0	0	50	250	1.0
Monitoring and tracking	80	0	500	150	730	3.0
NATURAL RESOURCES MANAGEMENT	10,870	1,000	1,490	2,140	15,500	63.5
Materials and inputs	6,330	1,000	0	0	7,330	30.1
Labor	0	0	0	2,140	2,140	8.8
Direct extension	3,110	0	0	0	3,110	12.8
Technical courses and training	430	0	0	0	430	1.8
Conservation works	0	0	840	0	840	3.4
Community development in RAAN	40	0	650	0	690	2.8
Operating expenses	630	0	0	0	630	2.5
Organization of growers	330	0	0	0	330	1.3
PROTECTED AREAS	0	0	1,200	0	1,200	4.9
Studies	0	0	280	0	280	1.1
Training and education	0	0	130	0	130	0.5
Supervision and op. expenses	0	0	250	0	250	0.1
Equipment	0	0	80	0	80	0.3
Infrastructure	0	0	460	0	460	1.9
INSTITUTIONAL STRENGTHENING	60	0	1,160	330	1,550	6.3
Studies	0	0	1,160	0	1,160	4.7
Environmental training and education	60	0	0	330	390	1.6
SUBTOTAL	12,830	1,000	4,350	2,670	20,850	85.4
UNALLOCATED	1,890	0	615	295	2,800	11.5
Contingencies	1,295	0	385	190	1,870	7.7
Cost escalation	595	0	230	105	930	3.8
FINANCIAL COSTS	580	0	35	135	750	3.1
Interest	425	0	0	0	425	1.7
Credit fee	0	0	0	135	135	0.6
Inspection & supervision	155	0	35	0	190	0.8
TOTAL	15,300	1,000	5,000	3,100	24,400	100.0
%	62.7	4.1	20.5	12.7	100.0	

G. Cofinancing

- 2.19 The program has two international sources of cofinancing. SIDA has expressed interest in providing cofinancing in the form of a US\$1 million grant for forest plantations in the first subprogram, in view of the similarity between its investments in past operations and those under this program. Use will be made of part of the existing executing structure supported by SIDA. The Nordic Development Fund (NDF) has indicated its interest in cofinancing the program with a US\$5 million loan, which would go to all three subprograms but chiefly to support efforts involving institutional strengthening and protected areas. Moreover, the borrower would contribute additional resources of at least US\$3.1 million, which may include resources on the order of US\$2.1 million contributed by the farmers benefiting from the program, equivalent in value to the additional labor required by the investments.

III. EXECUTION OF THE PROGRAM

A. Basic outline

- 3.1 The outline for executing this program will reflect the policy-setting and guiding role of the central administration, in keeping with the new policy on public administration reform, which includes reorganization of the structure of government, decentralization, and strengthening of the municipalities and grassroots organizations.
- 3.2 The approach to program administration and to the management of funds will be consistent with this reform and with the principles of decentralization. A coordinating unit (CU) will be created, with complete administrative and financial independence, which will use grassroots producer organizations, indigenous communities, municipalities, and NGOs as coexecutors and will be administered through local committees, with private sector participation by beneficiaries. Creation of the Unit will be a condition precedent to the first disbursement of the loan.
- 3.3 The execution procedures and structure of the program's CU will conform to the following principles: (a) incorporation of the experience gained from the pilot project financed by technical cooperation ATN/JF-4475; (b) a transparent procedure for managing funds; (c) flexible execution at the local level through the use of coexecutors, leaving MARENA to coordinate and supervise; and (d) the Ministry would not incur recurrent expenditures after the year five of the program.

B. Coordination and supervision

- 3.4 The CU will have a total staff of 13. At the central level there will be seven persons, including two technical engineers and one administrator, and at the regional level six regional technical coordinators will be hired under one of the technicians at the center, who will also make inspection trips in the field. At the end of the fifth year of the program, this unit would be shut down; the campesinos and municipalities would remain responsible for maintaining the works and investments, and MARENA and committees of local communities or foundations would remain responsible for the protected areas.
- 3.5 The work will be coordinated closely with Fondosilva, which was set up in 1993 and which will administer the funding provided by SIDA (Sweden) mainly for financing forest plantations in areas served by the program.
- 3.6 The CU will be attached to MARENA and will operate under a technical committee made up of the Director of the Forestry Directorate,

representing the Minister, the head of the CU, who will act as secretary, MARENA's Local Director, a representative of the PNDR to maintain coordination with activities carried out by this agency, and two representatives of the private sector, including NGOs, with links to the program's activities. The last two will be appointed by the Minister of MARENA from a list of five nominees.

- 3.7 In addition, based on the experience acquired and suggestions by the grassroots organizations which took part in the pilot project, local committees will be formed, each comprising the regional coordinator of the CU in the field, representatives of the grassroots organizations participating as coexecutors, MARENA's local representative, and one representative from the municipalities. Formation of the technical committee and local committees in a suitable manner to carry out their objectives and duties would be a condition precedent to the first disbursement of the loan.
- 3.8 As part of their interinstitutional coordinating functions, CONAGRO and CONAFOR will act as consultative organs on specific topics related to the execution of investments and policies studied under the institutional strengthening subprogram.
- 3.9 The functions of the CU are: (a) to supervise the procurement of goods and services for the program; (b) to review and approve the packages of applications for investments on private farms by indigenous communities and municipalities; (c) to keep a register of individual experts or firms that could provide extension and training services; (d) to pass along program funds to the various coexecutors; (e) to keep the accounts for the program and to monitor and evaluate it; (f) to act as liaison with the Bank; (g) to coordinate activities with Fondosilva; and (h) to ensure that the execution of the program conforms to the rules laid down in the Operating Regulations of the program. The coordinator of the CU will be authorized by the Minister of MARENA to sign contracts and serve as the official representative of the program. Submission to the Bank of the program's approved Operating Regulations and monitoring, supervision, and control system would be a condition precedent to the first disbursement of the loan.
- 3.10 The functions of the technical committee are: (a) to approve the CU's work programs and budget; (b) to supervise the work of the CU and coordinate these efforts with Fondosilva; and (c) to resolve, as a line of appeal, any problem that may arise between the CU and the coexecutors of the program.
- 3.11 The functions of the local committees are: (a) to do the initial screening of loan applications based on the criteria laid down in the program's Operating Regulations; (b) to help with problem-solving and interinstitutional coordination at the local level; and (c) to promote the program with a view to increasing the number of farmers participating in it.

- 3.12 The primary functions of the regional CU coordinators located in the field will be: (a) to work with the local committees in reviewing loan applications; (b) to coordinate program activities with the coexecutors; (c) to act as a link between the CU and the local committees, by helping to pass along information and to resolve special aspects of program execution at the local level; and (d) to coordinate and ensure that the regional execution of the program conforms to the rules laid down in the Operating Regulations.

C. Execution procedures

1. Natural resources management and recovery

- 3.13 The program will draw upon grassroots organizations (cooperatives, associations, etc.) and NGOs that are interested in participating in the program and will select them using the criteria in the Operating Regulations for executing the natural resources management and recovery subprogram. These procedures were built around the experience and evaluation results of the pilot project (ATN/JF-4475-NI), Fondosilva, and the community consultations carried out in the program areas. This experience suggests the need to publicize and promote the program in the various areas through the communications media and workshops with the local organizations and leading farmers, especially during the first year of the program.

a. Productive investments on private farms

- 3.14 In the case of productive forest-grazing activities, agroforestry with soil conservation, and forest management, a cofinancing system has been proposed whereby rural producers contribute their own and their families' labor while the program contributes money to buy the inputs and services for the investment, together with technical assistance.
- 3.15 The program has preidentified about 16 cooperatives - producers' associations - and 19 NGOs that could act as coexecutors, some of which have already participated successfully in the pilot project. The coexecutors will be selected in accordance with the eligibility criteria established in the program's Operating Regulations. The coexecutors can receive institutional strengthening through the program.
- 3.16 Participating coexecutors will assemble the applications from farmers and check whether they comply with the requirements for beneficiaries stated in the Operating Regulations. The "packages" of applications will be reviewed by the local committee and sent on to the CU for final approval. Following approval, the coexecutors will sign contracts with the CU for execution of the packages and with individual farmers for implementation of the individual projects. The participating coexecutors will receive 8% of the total contract costs to cover administrative expenses.

- 3.17 To prepare technical project sheets and on-farm work plans, as well as for technical assistance and extension services to farmers, the coexecutors will engage the services of extension agents or firms as a charge against the program. These extension agents and firms must be registered with MARENA and may receive specific additional training related to the program.
- 3.18 Should there be areas that have no local grassroots organizations or NGOs but do have farmers with a proven interest in participating in the program, the CU may hire coexecutors or firms from outside the area to carry out the proposed activities.

b. Promotion of reforestation

- 3.19 While the program is under way, a system of auctions will be set up among farmers, in which maximum available loan amounts will be announced for the program areas, together with the criteria for submitting project applications.
- 3.20 A list will be compiled of projects which meet the eligibility criteria, with preference going to the bids with the highest proportion of cofinancing by the farmers. Any applications left unfunded could be folded into the list of projects for the next round of financing. It will be stipulated that the counterpart share may not be less than 32% of the total amount, which represents the estimated proportion of labor in the total cost of these investments (see Annex III-1).
- 3.21 At the outset, the Fondosilva mechanism now in place would be used to fund forestry activities being financed by SIDA. As an incentive, one half of the investment costs and the entire cost of the technical assistance for farmers would be in the form of nonreimbursable funding (see Annex III-1).

c. Development of indigenous communities

- 3.22 A cofinancing system will be set up between the communities and the program, patterned after productive investments on private farms, whereby the communities contribute their labor and the program contributes toward the financing of inputs, minor works, and technical assistance. The activities will be executed by the communities with support from local NGOs and specialized entities.

d. Municipal conservation works

- 3.23 Applications for conservation works must be approved by the local councils and submitted to the CU. Applications would typically be filed by groups of farmers or others who present their proposal to the mayor's office, which takes care of forwarding it to the CU together with a data sheet and the technical specifications. The works would be carried out by the municipalities under contracts awarded through competitive bidding.

2. Conservation of protected areas

- 3.24 Works in this subprogram will be put up for bidding by the CU in accordance with the technical criteria issued by the Protected Areas Directorate (DGAP). Training will be carried out by specialized entities following competitive bidding. The CU will make disbursements according to the work plans agreed upon with the DGAP.
- 3.25 The local communities will be involved in executing this component through conservationist associations or foundations. In the Chococente and Miraflores areas, which already have prerequisites for such participation, the program would finance supervision and basic infrastructure and would include the associations in decision-making and in tracking the actions proposed. In addition, the process for monitoring the program will evaluate the role of possible foundations in the management of protected areas at both local and national levels (see the institutional strengthening subprogram).

3. Institutional strengthening

- 3.26 For training, the CU will sign contracts with specialized entities. Environmental education will be handled under an agreement with the Ministry of Education. Evidence that formal agreements have been signed between the CU and the ministry would be a condition precedent to the first disbursement. The institutional strengthening studies and consulting services will be put up for bidding by the CU in accordance with the technical guidelines of the Forestry Directorate (DGSF).

D. Flow of funds

- 3.27 Custody and administration of the financial resources of the natural resources management and recovery subprogram would be entrusted to a competitively selected commercial bank, with which a contract for this purpose would be drawn up. Submission of this draft contract would be a condition precedent to the first disbursement of the loan. This bank would make transfers to the coexecutors through its own agencies or through local financial entities used by the former. In the case of coexecutors that operate only locally, transfers may be made to savings and loan cooperatives selected for this purpose. Transfers will be made based on agreed advances and on requests from the CU (see Annex III-2).
- 3.28 The financial entities with local offices would disburse directly to the farmers and indigenous communities based on orders signed by the executing agencies, and would review the vouchers submitted by the farmers for disbursement of subsequent advances. The coexecutors would sign contracts with the bank administering the resources and the program's CU. In the case of the component covering municipal conservation works, the CU, through the administering bank,

would make transfers directly to the banks used by the municipalities that are to execute the component.

- 3.29 The CU would maintain four bank accounts for disbursements, one for each source of financing for the program (IDB, SIDA-Fondosilva, Nordic Development Fund, and the local counterpart funding from the government).

E. Recovery of funds

- 3.30 The natural resources management subprogram has built-in mechanisms for incentives and recovery of funds, both direct and indirect. In the institutional strengthening subprogram, which contains actions of benefit to the public at large, there are no provisions for recovering funds; for the conservation of protected areas, appropriate recovery mechanisms will be studied as part of the design of management plans.
- 3.31 For the natural resources management and recovery subprogram, the incentives and recovery of funds were determined after studying different alternatives for the production systems, taking account of farmers' cash flows and the recovery mechanisms introduced in the pilot program (ATN/JF-4775-NI). This study recognized that in the program areas there are no banks with lending facilities for activities of this kind and the commercial houses do not accept forest plantations or natural forests as security for loans.
- 3.32 Financing for agroforestry and forest-grazing production systems using improved technology on private lands covers agricultural inputs, forest inputs, and works and materials for soil conservation. Analysis of producers' ability to pay established that they could repay 100% of the cost of agricultural inputs and 20% of the cost of conservation works. The other 80% is viewed as a nonreimbursable incentive to carry out the works. If the works are not carried out, repayment of the full amount borrowed would be claimed. Reimbursements would begin at the end of the second year of each project and would take place in one, two, or three installments depending on what production systems the farmers adopt. In addition, the farmers would be reimbursing the coexecutors for the cost of administering the funds (8% of the loan), which will help to establish a relationship of financial accountability between the beneficiaries and the grassroots organizations. With respect to investments in the management of natural forests, the full cost of the forest management plans would be recovered in the case of both individual farmers and indigenous communities.
- 3.33 In the case of investments in forest plantations, which would take place through auctions, or the mechanism now being used by Fondosilva with SIDA financing, there will be indirect recovery in the form of: (i) the tax on forestry operations (currently an average of US\$3/m³); (ii) income tax; and (iii) sales tax (2%) on the various stages in the processing of forest products.

- 3.34 It is estimated that direct recoveries will total US\$2.3 million, which would be used entirely within the program areas to finance natural resources management and recovery activities similar to those in which the program is investing (see Annex III-1).

F. Procurement of goods and services

- 3.35 The procurement of goods and services and the hiring of consultants will be carried out in accordance with the policies, rules, and procedures of the Bank. The procurement regulations will form part of the loan contract.
- 3.36 For the procurement of equipment, materials, and other goods required for the program and the contracting of works financed in whole or in part with the proceeds of the Bank's loan, the system of contractor prequalification and international competitive bidding will be used in accordance with the rules and procedures of the Bank, whenever the cost of the equipment and materials exceeds the equivalent of US\$350,000 or that of the works US\$1.5 million. For purchases and contracts below that amount or financed entirely out of the local contribution, competitive bidding may be restricted to the domestic sphere. These procedures will be basically similar to those agreed upon between the Bank and the Government of Nicaragua for other projects in progress.
- 3.37 The selection and hiring of consulting firms shall be subject to the rules established by the Bank, as stated in Annex C to the Loan Contract. Projects may be bid on individually or in packages, taking into account their geographical proximity and similar technical characteristics.

G. Timetable of investments

- 3.38 The different components of the program have an execution timetable acceptable to the Bank, and a five-year period has been set for full implementation. The overall period and the timetable of investments and disbursements allow for the time needed to meet the conditions of eligibility for each component. The local counterpart financing will cover up to the equivalent of US\$300,000 in eligible expenses incurred to heighten public awareness of the program and the forestry activities in year one.

TIMETABLE OF INVESTMENTS AND DISBURSEMENTS (Direct costs)
(US\$000s)

	1	2	3	4	5	TOTALS
IDB/FSO	1,766	3,865	4,969	1,708	522	12,830
SIDA	500	500	0	0	0	1,000
NORDIC	692	1,000	1,439	419	800	4,350
Local contribution	399	827	920	476	48	2,670
TOTAL	3,357	6,192	7,328	2,603	1,370	20,850

- 3.39 The program execution period will last five years, allowing for the principal activities to be completed. Although these are relatively straightforward (promotion, organization, bidding and contracting procedures), they will take this long to execute.

H. Maintenance of works and recurrent costs

- 3.40 The borrower will be required to maintain all works financed by the program in accordance with the Bank's rules and procedures. MARENA will be the agency responsible for maintaining the vehicles and equipment for the CU and the institutional strengthening subprogram, and for investments under the protected areas subprogram. However, in the latter case, some costs are expected to be shared by the communities which form local committees to assist in the two areas (Chococente and Miraflores) that involve proposed infrastructure investments, and possibly by foundations to be created in the protected areas. In the case of the natural resources management and recovery subprogram, investments will be maintained by the campesinos and indigenous communities under the terms of the contracts with the CU covering each item of work. The municipal works would be maintained by the municipalities.
- 3.41 Recurrent costs for maintaining the investments on private farms and in indigenous communities are estimated at the equivalent of US\$420,000 and will consist mainly in the labor of beneficiaries needed to maintain the sustainable production capacity of the investments. The costs of maintaining the municipal works are estimated at 2% of the investments annually, or US\$17,000. The estimated cost of supervision and maintenance in the two protected areas involving investments initiated by the program is US\$91,000, which should be covered by the government or, alternatively, absorbed by the foundations to be created with support from the program, in part from user payments for services in the areas.

I. Monitoring and evaluation

- 3.42 The borrower shall submit to the IDB, as part of the annual basic information and monitoring reports, data on the effects of the program according to the agreed indicators, in addition to a final report. Monitoring is to be performed by the country, using the following mechanisms:
- a. supervision, to be carried out by the program's CU, by means of technical environmental inspections and budget checks, using a management information system that facilitates monitoring and decision-making with respect to implementation; and
 - b. hiring of a consulting firm to conduct a mid-term evaluation of the progress of the work and the extent to which technical, environmental, and financial targets have been achieved, and to offer recommendations on adjustments needed to improve efficiency in executing the investments by coexecuting agencies

at the local level and on bringing the financing made through Fondosilva into line with other activities of the program.

- 3.43 The socioeconomic indicators for monitoring and evaluating the program include parameters reflecting: (i) levels of community participation in the program (ratio of the total number of families to the number of families participating); (ii) organizational capacity of the communities, as expressed by the number of grassroots organizations and their membership; and (iii) indicators of movements in earnings based on productivity increases and changes in land use.
- 3.44 The environmental indicators include: (i) information on deforestation and erosion rates based on analyses of satellite imagery; (ii) data on stream flows and on river pollution and sedimentation gathered at stream-gaging and weather stations; (iii) information on reductions in the use of banned agrochemicals in the country; (iv) inventories of endangered species, based on inventories of fauna and flora to be carried out in the program's protected areas; and (v) number of visitors to and persons receiving environmental education in those areas.
- 3.45 The forestry indicators relate to: (i) the area planted and number of native and exotic species used; (ii) the incidence of forest fires and the area involved; (iii) growth observed in natural regeneration of forests; and (iv) area covered by natural forest plans and management, and indices of compliance with those plans.
- 3.46 The information to be gathered on activities aimed at strengthening the country's policies and strategies relates to: (i) evaluation of intersectoral harmonization of agricultural and forestry policies; (ii) analysis of compliance with PAF actions planned for Nicaragua; (iii) indices illustrating the dissemination of laws and rules to the public; (iv) establishment of foundations for protected areas; (v) number of municipal environmental committees functioning in the program areas; and (vi) number of persons attending environmental training and dissemination courses.
- 3.47 The Bank would monitor the program through the Country Office. Its review of the mid-term report will place special emphasis on institutional responsiveness in executing the program and on how well the monitoring system is working; the results of the evaluation will be made known to the government, which will in turn assume responsibility for any follow-up action required.

IV. BORROWER AND EXECUTING AGENCY

A. Ministry of the Environment and Natural Resources (MARENA)

- 4.1 MARENA was created in 1994 by virtue of the law establishing IRENA. The new administration made radical changes in its structure due to the new policy on public administration reform, transforming the Ministry from an executing entity to one designed to plan, regulate, and coordinate policy and strategy in the area of conservation and the use of natural resources (for a more detailed description of MARENA see Annex IV-1).
- 4.2 In this relatively short span, by eliminating duplication and consolidating functions, MARENA was transformed from an organizational structure with a welter of different departments and divisions, in which more than 25 units reported directly to the Minister, to a far more tightly-knit structure. The result of this process was a reduction in personnel from about 1,253 in 1994 to 665 by August 1995 (or 47%), with a further reduction of about 8% expected in 1996.
- 4.3 MARENA's present structure comprises three directorates: (a) Protected Areas, Fisheries, and Fauna; (b) Forestry; and (c) Environment. There are also two support divisions and the office of the Minister.
- 4.4 This restructuring was made possible, first, by the energy shown by the new administration in taking the decisions needed to overhaul the Ministry and, second, by the influx of grants, notably from the Nordic countries, which were used to fund consultancies on a number of issues (organization, policies, laws, etc.). These countries also financed salary supplements for several MARENA officials.
- 4.5 All MARENA's current investments and projects are being underwritten by foreign grants. Of its total 1995 budget, 64.6% is financed by these grants, 7% by proceeds from sales and services, and 28.4% by the government budget, of which 15.7% represents mandatory counterpart funds and the remaining 12.7% operating expenses.
- 4.6 Of the total budget for these investments, 36% represents consultancies and studies directly related to MARENA's functions, 21% is for eight specific projects in the process of being transferred to the PNDR, 11% is for specialized activities, such as the Seed Bank and the Zoological Gardens, which are to be transferred to other agencies, and the remaining 32% represents activities that will not be transferred to other institutions; the latter are the ongoing actions in the protected areas and fire prevention in the forests of northeastern RAAN, etc. There will be some projects in the near future that, because of their nature and the absence of suitable

executing agencies, will have to be coordinated by MARENA, a case in point being the proposed program (see chapter V.B).

- 4.7 Where activities offer scope for increased private sector participation, MARENA is exploring novel arrangements, such as the creation of foundations and participation by local communities. Mechanisms of this kind have been planned for the conservation of protected areas under the present program.
- 4.8 The policy now in force would scale back MARENA's investments to 25% of their current level by the year 2000 (see Annex IV-1). The government, however, will have to raise its budget allocations in some individual categories, mainly to offset the salary supplements that have up to now been paid by donors. These increases represent an estimated minimum of 15% of current operating expenses or 6.5% of the total budget required by MARENA in 1998, by which time most of its projects will have been transferred or fully executed.

B. Coexecutors

- 4.9 The coexecuting agencies fall into two groups: (a) grassroots organizations; and (b) NGOs. The grassroots organizations consist mainly of production, collection, and credit cooperatives, which vary in size and membership, as well as in capacity and experience.
- 4.10 During the analysis stage, some 16 grassroots organizations were identified, most of them in the program areas, with varying capacities and interests and with memberships ranging from 12 to 1,250. The initial diagnosis established that most of these cooperatives have the administrative capacity to convene and mobilize their members and are interested in participating as coexecutors in the natural resources management and conservation subprogram; three of them participated successfully in the pilot project and helped with the final design for execution of the program. As part of the program, a study will be made of the managerial capacity and possible administrative or technical strengthening needs of these organizations for funding by the program.
- 4.11 The NGOs consist mainly of entities carrying out small development or conservation projects, but also include, for example, associations of industrial lumber dealers and forestry engineers. Some 19 NGOs have been identified in the program areas, and roughly one third of them have expressed an interest in taking part in programs of this kind. Other grassroots organizations and NGOs may well become involved in the program once they have learned more about it through training.

V. VIABILITY AND RISKS

A. Technical viability

- 5.1 Successful implementation of the project, through the adoption of improved soil use practices, would make it possible to maintain crop yields, or increase them in a sustainable manner, diversify production and, ultimately, improve the income levels and quality of life of the growers and their families. Attainment of these benefits is a prerequisite for achieving the overall environmental objectives for each basin, since the change-over to conservationist agroforestry technologies will be sustainable only to the extent that producers are convinced that the (personal) financial return on their new practices is significantly greater than what they earn from their current practices.
- 5.2 The practices to be used in connection with investments under the natural resources management and recovery subprogram are based on forestry and agroforestry technologies which have been validated in Nicaragua and other Central American countries through programs carried out by CATIE, FAO, and such universities as the National Agrarian University, and field experience gained by grassroots organizations and NGOs like UNAG and CECOTROPIC, which participated in the pilot project (ATN/JF-4795-NI).
- 5.3 The community surveys and consultations carried out made it easier to involve participating communities in selecting the priority activities included in project preparation. In this way, approaches to land-use management were designed on the basis of the traditional technologies already in use by the beneficiaries, building on their recognition of the urgent need to implement the desired change in use in order to contain the ongoing processes of degradation, as reflected in loss of fertility in the soil, reduced water retention capacity, and the beneficiaries' reduced productivity and earnings. Plans also included the strengthening of extension and training activities by nongovernmental organizations, to help manage natural resources on farms and in indigenous communities.
- 5.4 The activities planned for the protected areas subprogram are neither complex nor without parallel in the country. One of the keys to success for the program is to heighten farmers' awareness of the program. Accordingly, the program will be promoted during the first two years of execution.
- 5.5 Arrangements have been planned to monitor the program during execution, to provide technical feedback, and to incorporate any necessary adjustments as it proceeds. There is also provision for advisory services that may be needed to utilize information from

surveys of forest, weather, and stream-gaging data for purposes of monitoring and evaluating the program.

B. Institutional justification and operational viability

- 5.6 A review was made of the institutional capacity of several existing entities to execute the proposed program. One of those evaluated was the National Rural Development Program, but it was not considered the best option because it was created only in 1995 (with funding from loan 927/SF-NI) and its operating and monitoring systems are still in the formative stage; moreover, it is carrying a heavy workload of 17 projects totaling more than US\$200 million.
- 5.7 As conceived, the institutional approach adopted blends the role of the public sector, as guiding and spearheading the development process, with that of the beneficiaries as its immediate protagonists. The blueprint for execution is innovative in that it was decided to take advantage of the capacity of the grassroots organizations and NGOs identified to manage the program.
- 5.8 As a result of the analysis, it was concluded that the best course would be to set up a CU attached to MARENA, which would have full administrative and financial autonomy and the right technical capacity to execute the program, and would cease to function once its objectives had been accomplished. The activities launched by the local entities will continue to be carried out with partial financing from funds recovered as part of the program. Those entities would be eligible for administrative and technical strengthening through the program.
- 5.9 This operational approach incorporated the lessons drawn from experience with the pilot project (ATN/SF-4799-NI), by building in the suggestions made by the coexecutors for improving procedures and streamlining processing. It is proposed that this operational flexibility be retained with the help of the Operating Regulations, rules, procedures, methodology, and arrangements for annual reviews and evaluations of program execution. These tools were designed to allow any necessary adjustments to be incorporated with the full participation of the coexecutors and beneficiaries.

C. Financial viability

- 5.10 The financing plan for this operation includes resources from the Nordic Fund (Denmark, Finland, Iceland, Norway, and Sweden), the Government of Sweden (through SIDA), and the prospective IDB loan. The Government of Nicaragua would contribute US\$800,000 during the period of project execution; in addition, the labor supplied by the farmers is included as a counterpart.
- 5.11 Since agricultural producers are the main executors of activities under the program, its viability relies heavily on the adoption of

production systems that are profitable for them. In this connection, technological packages will be promoted that are financially attractive to growers and sustainable once the project is complete.

- 5.12 Based on earlier experience with farm and cash-flow models, it was concluded that the average grower, lacking the necessary income, needs help in the form of an initial financial incentive to defray the cost of implementing the technological packages. The analysis showed a positive rate of return on these investments, which will prove instrumental in improving growers' earnings, in a sustainable manner, once the changes are adopted.

D. Environmental viability

- 5.13 An environmental impact study was carried out on the program and used as input for the pertinent environmental summary. The CMA approved the environmental summary at its meeting on August 1, 1995, and ratified the classification of the program as a Category III operation.
- 5.14 The program's chief positive impacts are: (a) improvements in land use, (b) a reduction in the deforestation rate, (c) reductions in erosion, soil loss, and sedimentation, (d) enhanced plant and tree cover to increase biomass, absorption of atmospheric carbon dioxide, and increased aquifer recharge, (e) improved streamflow regulation, (f) expanded environmental education and training in natural resources management, especially to prevent water pollution from harmful agrochemicals, (g) generation of environmentally sustainable economic opportunities through improved soil productivity, and (h) improved financial sustainability in the management of protected areas by involving the private sector through the creation of foundations to raise funds and create opportunities for ecotourism.
- 5.15 Potential negative environmental impacts arise from the possibility that too little use will be made of the techniques for planning and managing natural forests. To minimize this risk, the project includes provision for technical assistance in those technologies, as well as in the selection of native species, forestation, and the training of farmers to avoid the use of harmful agrochemicals like DDT, which, although banned internationally, are commonly used in Nicaragua. Evaluation activities will provide an opportunity to supervise proper application of the proposed technologies.

E. Socioeconomic viability

- 5.16 The socioeconomic evaluation covered all actions associated with implementation of the forest-grazing, agroforestry, and forestry systems in the basins and areas involved in the program. These investments account for 64% of the overall cost of the program.

- 5.17 The economic benefits of the project can be grouped into two main categories: (i) benefits at farm level; and (ii) positive externalities which benefit society at large.

1. Viability of the systems at farm level

- 5.18 The agroforestry and forest-grazing systems proposed in the project represent improvements over farmers' existing practices and avoid drastic changes in cropping patterns and/or the construction of complex conservation works that involve a great deal of labor and extra time for the producer. The basic goal is to improve the productive efficiency of the farms through flexible technological packages tailored to producers' needs, capabilities, and demand.
- 5.19 The comparative results of the financial impact of changing practices at the farm level have been documented, notably in the specific case of the "De Campesino a Campesino", program which promotes much the same systems as this project. Planning for the "De Campesino a Campesino" program began in 1987 with a goal of reaching 1,100 producers in the municipality of Santa Lucia. To begin with, 117 producers started to make improvements on their farms. In 1992, there were 400 producers using, among other things, soil conservation practices. Present indications are that all the producers have now signed up. The main method of extension was from producer to producer, through the demonstration effect.
- 5.20 A survey conducted by the Ministry of Agriculture and Livestock (MAG) during the 1991-1992 agricultural year shows that over a three-year period the producers who joined the extension and soil conservation program increased their yields in some cases up to 36% in the case of maize and up to 45% in the case of frijol. These same growers reduced the use of agrochemicals by between 10% and 32%. By contrast, the production yields of the growers who did not join showed downward or flat trends. Statistical analysis of measurements of frijol yield with and without conservation found the difference observed to be significant to within a 5% probability of error. The average yield was 1,636 kg/hectare with conservation and 1,019 kg/hectare without conservation. Evaluation of the program showed changes of up to 30% in producer earnings and a twofold increase in income per day worked.

2. Evaluation of the systems proposed

- 5.21 The objectives and goals of the program are defined by reference to 11 systems that approximate existing production patterns in each of the basins. Depending on the size of the farms and their geographical location, the program specifies four forest-grazing, two agroforestry, two natural forest management, and three reforestation systems. As indicated in the tables of targets, most actions would involve growers of basic grains (subsistence and traditional) and campesinos practicing extensive and dual-purpose stock-raising; the hope is that these latter systems would switch to agroforestry and

forest-grazing production patterns, respectively. The goal of the forest management and reforestation programs is to recover degraded areas in order to improve a basin's environmental status, but at the same time to afford an attractive long-term financial option for owners with sizable tracts of land.

- 5.22 The technical and financial demands in all systems entail greater use of manpower and heavier outlays during the first year of implementation, which reduces the potential income flow for producers. This is why bridge financing is essential if the packages are to be viable. This assistance is visualized as a form of one-off, short-term incentive to promote the adoption of conservationist technologies (see chapter III.D). According to the farm models, once the improvements have been made, a sustainable increase is induced in each system's income level. From the standpoint of private investment, all the systems show acceptable rates of return (see document 11 in the technical files). The forest-grazing systems show a benefit-cost ratio (B/C) of between 1.20 and 3.64. For their part, the agroforestry systems have benefit-cost ratios of 1.75 to 3.40. The natural forest management practices are also financially viable (B/C 2.44-3.15). These results are purely indicative, but they show that even using very conservative assumptions, compared for example with the results obtained in the "De Campesino a Campesino" program, the packages would be attractive to producers. In every instance there is an increase in annual income per unit of labor per hectare.
- 5.23 As is being demonstrated by the ongoing pilot project, there are in practice many factors which influence the rate of return on each individual farm, the most critical being whether resources are to hand when needed, how flexible the systems are, and how good and effective the technical assistance is. Important as the increase in productivity is for such traditional crops as basic grains, the results suggest that it is not the only factor that makes the packages profitable; rather it is the opportunity to diversify production in favor of "conservationist" crops, e.g. fruit trees, that fetch better prices and have a higher financial sustainability.
- 5.24 The forestation systems do not generate immediate financial benefits, but the per-hectare return is high for the forestation system having broadleaf species for industrial and multipurpose with an internal rate of return (IRR) of 24%. For reforestation with local species of pine and plantations for energy use, the rate of return per hectare would be lower, with an IRR of 10%.

3. Aggregate results

- 5.25 Using the models for individual systems and the targets for bringing the various basins into the program, estimates were made of the aggregate value of the benefits in terms of the income the project would generate at farm level. Apart from the investment costs on the farms, the cost side includes all the other expenses required

to achieve the subprogram's targets (e.g. administration, promotion, training, and conservation works).

- 5.26 The net present value of the benefits at farm level is US\$5.9 million, and the internal rate of return is 16.7% (see document 10 in the technical files). This result suggests that the investments in the subprogram would be justified even if only the benefits of incremental producer income were taken into account. Measured by their economic return, the forest-grazing systems (extensive stock farming) and energy (e.g. fuelwood) plantations are the weakest, but it is important to include them in order to achieve positive environmental impacts in the basins.

4. Value of externalities

- 5.27 The improvements in production systems would have a significant impact on the environmental quality of the basins. Although there is a clear cause (erosion) and effect (damage) relationship behind the problems observed (silting of reservoirs, water pollution, electric power outages, floods), there are no reliable scientific data that make it possible to attribute physical changes, in any cast-iron fashion, to the actions that the producers will be taking as the project is executed. Nonetheless, with the help of some indicative assumptions, some insights into the project's possible impact can be given.
- 5.28 **Silting of Lake Apanas.** The lake lies within the area of influence of the project and contains a hydropower dam which provides 16% of the country's capacity. According to the environmental impact assessment, the process of sedimentation would at its current rate shut down the dam in 15 years. To keep the dam operating during this period, dredging would have to start in the next few years. According to the environmental study, rational management of the basins that dump sediment could reduce silting by 600,000 tons/year. Assuming a low dredging cost of US\$4/ton and that the program is 30% effective, conservation efforts could help to save US\$720,000 a year, probably starting in the fifth year and increasing in the future.
- 5.29 **River and flood control in the Lake Managua basin.** As part of the project, at least 2,000 hectares will be covered by agroforestry systems in the upper basin of Lake Managua. Actions to alter soil use have been identified as essential to management of the lake's basin. Problems with rivers overflowing their banks and floods in Managua cause physical damage each year, often with loss of life. The solution, apart from conservation efforts on the part of the producers, requires physical structures at specific locations. These supplementary works are to be carried out under the Lake Managua project (NI-0027). The benefits of flood control are made possible in part by the change in soil use to be put into effect by the producers. Overall, these benefits are estimated at more than

US\$400,000 a year in terms of damage that will be averted following completion of the storm drainage and riverbed control works.

- 5.30 Other benefits associated with improved use of soil resources could accrue from savings on water treatment costs in the Segovias and the central area, where there is evidence that treatment costs are on the rise because the water is polluted and heavily silt-laden. A conservative estimate of anticipated annual savings would be at least US\$150,000 from the eighth year onward. Moreover, the value of the additional power produced from the Lake Apanas dam could amount to US\$1 million a year between years 10 and 20.

5. Sensitivity analysis

- 5.31 The sensitivity analysis was carried out on the economic model taking account only of producers' income benefits. Sensitivity to cost increases indicates that a 20% rise in costs would drop the IRR to 14.51%. For the IRR to fall to 12%, costs would have to go up by 50%. Assuming that only 50% of the targets were included and the full costs of administration, promotion, and extension were incurred, the IRR would still be above 12% (14%). If producers joined the program at a slower rate than anticipated, there would be only a slight decrease in its IRR.

6. Distributive impact

- 5.32 The areas served by the project, particularly in the north (Jinotega and Matagalpa) and Segovias (Estelí, Madriz, and Nueva Segovia) have been identified as the poorest in the country. Although these regions represent only 23% of the population, they contain 46% of the population classified as extremely poor in Nicaragua. Within the regions, the agricultural producers are economically the most disadvantaged. The most impoverished groups are the subsistence farmers (35% of the beneficiaries) and those engaged in extensive stock-raising (7%). They are followed by the traditional farmers (20%) and the beef-and-dairy farmers (16%). The average family income of these groups is estimated to fall below the Bank's poverty line (264.6 colones/per capita/month). Of the benefits (i.e. incremental income) that the program would generate in the first 10 years, 80% would represent increments in the incomes of the poorest groups (agroforestry and forest-grazing).

F. Community participation

- 5.33 To make sure that the priorities and expectations of the program's target population were taken into account and that arrangements for them to participate in its components were as appropriate and workable as possible, consultations were held with a representative sample of the communities in the project's areas of influence.

- 5.34 The findings of these consultations were used as a point of departure for drawing up specific recommendations at the time of the feasibility study; these were built into the design of the pilot activities and of the program components, as well as the design of mechanisms to ensure ongoing participation by communities and institutions in the execution and supervision of the program.
- 5.35 During execution of the program, community participation will be strengthened by using the grassroots organizations and NGOs as coexecutors and establishing local committees.

G. Participation by women

- 5.36 Given the importance of women in production processes within rural farming economies, their participation will be fostered by applying a gender focus throughout the different program components. In particular, emphasis will be placed on promotional and educational activities and the adaptation of appropriate technologies for the use of wood. Extension activities will be required to include specific efforts to address the needs of women producers and heads of households. The program promotes active participation by women in investments and emphasizes that both spouses should sign the loan contracts for family-owned farms.
- 5.37 As there are hardly any women's organizations in any of the basins, the project will incorporate special training programs to facilitate networking among women in the different areas of the program.

H. Risks associated with the program

1. Institutional capacity and acceptance by farmers

- 5.38 The institutional risks are as follows:
- a. Farmers may be slow to sign up, which would slow the program down. To minimize this, the program will be launched with the entities that took part in the pilot project (ATN/SF-4755-NI), and the CU will initiate efforts to publicize and raise the awareness of farmers regarding the benefits of the program.
 - b. The capacity of the coexecutors may be deficient. In this connection, measures will be adopted to offer strengthening for community organization and to train the coexecutors; they will also be offered 8% to cover any administrative expenses they incur while implementing activities under the program.
 - c. Unresponsiveness of operating, administrative, and financial procedures. This risk has been minimized by incorporating the suggestions of the coexecutors of the pilot project into the Operating Regulations; also, annual reviews will be conducted and the procedures adjusted as necessary.

- d. Possible changes in the government's institutional policies. To minimize this risk, the CU formed will be given complete administrative and financial independence and will be attached to MARENA, which is the primary policy-setting authority in the country's environmental and forestry sector.

5.39 The operating blueprint was designed to mitigate the risks foreseen in implementing this program. However, unlike the pilot project, where the CU itself was involved in mobilizing resources and handling the farmers' applications, it will require close monitoring by the government and the Bank. Under the project, the coexecutors (grassroots organizations and NGOs) will be handling these procedures directly, which might mean a slower start and longer learning curve, but will lead to better continuity in carrying out the activities, even after this initial five-year phase of the program.

2. Land tenure

5.40 The adoption of new conservation practices might be affected by the land tenure status of the producers. Statistics obtained during the design stage of the program show that roughly 80% of the land in the basins involved have security of land tenure and ownership deeds; moreover, the National Institute of Agrarian Reform (INRA) will be working in the program areas to title additional land under existing programs.

**ENVIRONMENTAL PROBLEMS IDENTIFIED BY THE COMMUNITIES:
INDIGENOUS COMMUNITIES**

PROBLEMS	CAUSES	EFFECTS
Deforestation	<p>Indiscriminate felling of forests by private investors</p> <p>Absence of forestry management plan</p> <p>Absence of monitoring and control of timber extraction</p> <p>Lack of education</p> <p>Weak enforcement of forestry and environmental legislation</p> <p>Rights of communities to forestry resources unclear</p> <p>Nonparticipation by indigenous communities in forestry activities</p>	<p>Reduction in forested areas</p> <p>Less protection of soils</p> <p>Reduction in wildlife</p> <p>Higher poverty levels among the indigenous peoples</p> <p>Threats to reserve area</p> <p>Communities have fewer opportunities of subsistence from hunting</p>
Pollution of river waters	<p>Dumping of mining wastes into water sources</p> <p>No monitoring of mineral extraction</p>	<p>Destruction of aquatic fauna in the rivers</p> <p>Fishing prospects reduced for indigenous peoples</p> <p>Poor quality of water for human and animal consumption</p> <p>Higher incidence of disease</p> <p>Increased poverty in the indigenous communities</p>
Frontiers of agriculture being pushed back	<p>Migration of outsiders into the indigenous communities</p> <p>Violation of indigenous communities' historic rights to the land they occupy</p> <p>Violation of Law #28, the statute of autonomy of the regions</p> <p>Lack of respect for land titles</p> <p>Lack of demarcation of boundaries and ownership of communal land</p> <p>Unemployment</p>	<p>Increase in poverty level of the indigenous communities</p> <p>Possible deterioration of reserves</p> <p>Loss of valuable timber species</p> <p>Destruction of flora and fauna in reserve area</p> <p>Incalculable economic and biological losses</p> <p>Problems in education and with drug addiction</p> <p>Disputes between the communities and government representatives</p> <p>Mistrust between the communities and outsiders to the area</p>
Penetration roads and bridges in poor state of repair	<p>Lack of maintenance</p> <p>Little budget support or interest in solving matters from the municipal, regional, and national government</p> <p>Shortage of leaders within and outside the community</p>	<p>Uncontrolled deforestation</p> <p>Isolation of communities</p> <p>Problems with trade from the communities to the urban area</p> <p>Problems for execution of the project</p>
Rural poverty	<p>Shortage of projects that create jobs and earnings for the indigenous population</p>	<p>Illiteracy</p> <p>Deterioration of flora and fauna</p> <p>Deforestation</p> <p>Progressive degradation of forests</p>

**ENVIRONMENTAL PROBLEMS IDENTIFIED BY THE COMMUNITIES:
INDIVIDUAL FARMERS**

PROBLEMS	CAUSES	EFFECTS
Deforestation	Inappropriate agricultural practices Demand for wood in cities Poor forest management Violation of private property Forest fires Unemployment and population growth Lack of environmental education	Soil erosion Sedimentation of rivers Low agricultural productivity Reduction in streamflow Reduction in irrigation capacity Extinction of flora and fauna Water pollution
Water pollution	Deforestation and soil erosion Dumping of human and industrial waste (tanneries, brick factory, and rubble) into the rivers Improper use of agrochemicals Removal of river sand Fish-kill (Estelf) Institutional weakness	Reduction in streamflow Destruction of bottomlands Water pollution and sedimentation Poor sanitary conditions Spread of disease Fish-kill
Low agricultural productivity	Overcultivation of soils Soil erosion Use of inappropriate agricultural systems Deforestation High production costs Improper use of agrochemicals Poor rainfall levels	High levels of poverty Malnutrition High incidence of disease Poor housing conditions Illiteracy Unemployment
Institutional weakness and lack of support	Budget problems Shortage of technical capacity Lack of interinstitutional coordination	Lack of control in enforcing environmental legislation Absence of environmental management programs Lack of monitoring and oversight Forest management problems Water pollution Mismanagement of natural resources
Pushing back the frontiers of agriculture	Creation of pastures for stock farming Sowing system used on steep slopes by migratory farmers	Increase in erosion More rapid deforestation Disequilibrium in the ecosystem Mismanagement of natural resources

**OVERVIEW OF THE LOGICAL FRAMEWORK
END-PURPOSE**

NARRATIVE SUMMARY	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<ul style="list-style-type: none"> To improve the quality of life of poor campesino families and the population at large in the basins selected, through rational and sustainable use of natural resources, notably soil, forests and water. 	<p>Socioeconomic indicators of social well-being and quality of life:</p> <ul style="list-style-type: none"> The average annual income on farms using forest-grazing and agroforestry systems is increased by between 40% and 80% from the second year of their joining the program. The income of 1,145 forest-grazing and 2,590 agroforestry producers is thereby improved and their poverty level reduced. Annual rates of joining up to year 4 are 10%, 35%, 45%, and 10%. 30,700 hectares are under natural forest management, yielding incremental, sustainable production of 1.6 m³/ha/year of fuelwood and timber, and 13,100 hectares are under reforestation on degraded land, yielding usable timber from year 6. 4,700 project families are able to meet their fuelwood consumption needs, and 500 improved (Lorena) stoves are introduced among the families. Community organizations are established to support the rational management of natural resources. <p>Long-term environmental and physical indicators at basin level:</p> <ul style="list-style-type: none"> Average streamflows in rivers will be kept at current levels rather than decline by an average of 1.2% a year as they have done over the past 15 years. Flood levels will be lowered from 5 to 25 cm, depending on the depth and shape of the riverbed, in 10 years. Sediments in suspension in the rivers will be reduced from the present level of 13.6 million tons a year to 7.8 million tons a year in 15 years. The discharge of sediments into Lake Apanás will be reduced by 0.6 million tons a year for 15 years. Use of banned agrochemicals in the program area will be phased out and that of chemical fertilizers reduced by 20% in 5 years. The overall annual rate of erosion will be reduced from 13.6 million tons to 7.8 million tons in 15 years. The annual rate of deforestation will decline from 1.6% to 0.8% in 10 years. 	<ul style="list-style-type: none"> Follow-up socioeconomic surveys Environmental monitoring program Inspection, monitoring, and control visits Regional environmental and social statistical data 	<ul style="list-style-type: none"> The extension and programs are completed Good levels of acceptance by producers and campesino families Executing units and function in a coordinated manner Social and political project areas

**OVERVIEW OF THE LOGICAL FRAMEWORK
END-PURPOSE**

NARRATIVE SUMMARY	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<ul style="list-style-type: none"> Improved production systems adopted by growers Soil conservation techniques known and implemented Forest management systems established and operating Indigenous communities strengthened in the sustainable use of natural resources Degraded areas reforested and maintained Protected areas system consolidated. RRNN's institutional management capacity strengthened Common works implemented Grassroots coexecutors strengthened 	<ul style="list-style-type: none"> Farm-level data on production, yields, and diversification. Yields of meat, milk, wood, corn, and kidney beans increase gradually from year 2 and stabilize in year 5. Farms are diversified by the production of banana and other fruit trees. Farm-level data on use of inputs, plants, and materials for soil conservation. Each farm that joins uses a combination of practices that includes contours, terrace cropping, hedges, fences, improved pastures, and plantations for fuelwood, etc. Data on areas reforested and under forest management, with a plant survival rate of 90% after year 3. Physical measurement and verification of common works. 500 km of riverbeds and gullies stabilized after year 5. Documentation on incorporation of protected areas and management plans drawn up. Number of persons trained: <ul style="list-style-type: none"> - 5,000 producers - 350 officials of loc. govt. and NGOs - 400 rural women Dissemination to the population at large. 	<ul style="list-style-type: none"> Community consultations as part of the project Review of technical records at producer and farm level Monitoring and audit reports Regional statistics from MARENA Evaluation reports from workshops and evaluation courses 5,000 producers 350 local government and NGO officials 400 rural women 	<ul style="list-style-type: none"> Contractual conditions effectiveness are fulfilled Flow of funds to project appropriate and timely Counterpart resources available Adequate coordination and monitoring
<ul style="list-style-type: none"> Management and recovery of natural resources Consolidation of protected areas and management plans Environmental strengthening of institutions (MARENA and municipalities) 	<ul style="list-style-type: none"> Achievement of targets of natural resources management program (see detailed Table of Targets). Achievement of targets of protected areas component (see detailed Table of Targets). Achievement of institutional strengthening targets (see detailed Table of Targets). 	<ul style="list-style-type: none"> Program evaluation and monitoring system (annual, mid-term, and completion) Periodic progress reports Supervision reports from the Bank's Country Office External audit of project 	<ul style="list-style-type: none"> Continuity and adequate coordination for execution Institutional stability Government and project genuinely committed to the project

**OVERVIEW OF THE LOGICAL FRAMEWORK
END-PURPOSE**

NARRATIVE SUMMARY	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<p>Natural resources management</p> <ul style="list-style-type: none"> Promotion and extension Technical assistance and training Investments by producers Preparation of farm management plans Preparation of applications Distribution and delivery of funds and incentives Forest management in indigenous communities Control of gullies Physical works to stabilize riverbeds Establishment of green belts <p>Conservation of protected areas</p> <ul style="list-style-type: none"> Zoning of areas Compilation of land surveys Inventories and management plans Training and extension Construction of minor works <p>Institutional strengthening</p> <ul style="list-style-type: none"> Evaluation studies and dissemination Policy support Training, education, and promotion 	<p style="text-align: center;">Direct costs in US\$ thousands</p> <p>Management of natural resources</p> <ul style="list-style-type: none"> Promotion and organization \$ 530 Extension \$3,110 Training \$ 430 Inputs (reimbursable) and nonreimbursable) \$7,330 Farm labor \$2,140 Administration by grassroots organizations \$ 630 Development of indig. communities \$ 690 Conservation works by municipalities \$ 840 <p>Conservation of protected areas</p> <ul style="list-style-type: none"> Study and training \$ 410 Supervision and equipment \$ 330 Works \$ 460 <p>Institutional strengthening</p> <ul style="list-style-type: none"> Studies \$1,160 Environmental training and education \$ 390 <p>Monitoring and follow-up \$ 580</p> <p>Administration \$1,640</p>	<ul style="list-style-type: none"> Annual financial reports Supervision and tracking of disbursements Periodic evaluation by the Country Office Annual evaluation and monitoring 	<ul style="list-style-type: none"> Adequate coordination Timely contracting Responsiveness of i

**SOCIOENVIRONMENTAL AND FORESTRY DEVELOPMENT PROGRAM
OPERATING REGULATIONS FOR THE
NATURAL RESOURCES MANAGEMENT AND RECOVERY SUBPROGRAM**

(Fourth Draft)

I. INTRODUCTION

- 1.1 The Socioenvironmental and Forestry Development Program was conceived as part of the Forestry Action Plan (PAF), which aims at improving productive land use, especially by small and medium-sized producers, by lessening the impact of environmental deterioration by stimulating production systems based on practices designed to conserve soil and enhance the productivity of natural resources.
- 1.2 The program comprises three subprograms: Management and Recovery of Natural Resources (A); Conservation of Protected Areas (B); and Institutional Strengthening (C). Subprogram A is made up of three components: (a) commercial investments in private farms; (b) development of indigenous forest communities; and (c) municipal conservation works. The activities in the components will be governed in accordance with the general rules and policies set forth in the Loan Contract between the Government of Nicaragua (GON) and the Inter-American Development Bank, and the rules, criteria and procedures laid down in the present Regulations.
- 1.3 The cost of the program is US\$24.4 million, and the program's external financing resources during the period of execution comprise US\$21.3 million from: (i) a loan of US\$15.3 million from the Inter-American Development Bank, (ii) a US\$1 million grant from the Swedish Cooperation Agency (SIDA), and (iii) a US\$5 million contribution from the Nordic Development Fund (NDF). In addition, the program will receive a contribution equivalent to US\$2.14 million in the form of farmers' labor and one of US\$960,000 from GON.
- 1.4 Subprogram A has a direct cost (without contingencies, escalation or financial expenses) of US\$15.5 million for execution during the life of the program. SIDA financing for the program will be US\$1 million, as mentioned earlier, and that of the NDF US\$1.49 million. The farmers will contribute the equivalent of US\$2.14 million, as mentioned above, in the form of labor.
- 1.5 For the execution of Subprogram A, priority areas have been chosen in the areas defined in chapter III of these Regulations, but activities may also be carried out in other areas. The subprogram will be executed by MARENA through an administratively and financially independent Coordinating Unit governed by a National Technical Committee. The program has an initial period of execution of five years.

- 1.6 The contracts and agreements to be signed for execution of the subprogram shall comply with the general rules stipulated in the loan contract with the IDB and in these Regulations.

II. OBJECTIVES OF THE PROGRAM

- 2.1 The overall objective of the program is to promote the sustainable management of natural resources - chiefly forests, soil and water - in the North Central, Southern Central Pacific and RAAN regions of Nicaragua and to improve the institutional framework for environmental management, which will lead to improvements in the socio-economic situation of the rural population and in the environmental situation of the population as a whole.
- 2.2 The specific objectives are:
- a. to improve the management and recovery of natural resources: forests, soil and water, so as to increase the sustainable productivity of farms and the income levels and environmental quality of life of the rural communities in selected basins;
 - b. to contribute to the establishment and consolidation of protected areas so as to assure the maintenance of delicate ecosystems with high economic potential, under proper management systems; and
 - c. to strengthen the managerial capacity of public and private organizations at both national and local levels in environmental and forestry issues, and to prepare the studies for a possible second stage of the program.

III. AREAS OF EXECUTION OF THE SUBPROGRAM

- 3.1 The resources of the subprogram will be earmarked to execute actions in the following priority basins:
- Basins of the Dipilto and Jicaró rivers, in Nueva Segovia;
 - Basins of the Estelí and Pire rivers, in Estelí;
 - The Molino Norte, San Francisco and Jiguina basins in Matagalpa and Jinotega;
 - The Municipality of San Francisco Libre and the southern basin of Lake Managua, in Managua;

- The Río Grande basin in Carazo, and;
- The indigenous communities of Waspán, in the Atlántico Norte Autonomous Region (RAAN).

Other basins may be added to the program if proven demand exists.

IV. PROMOTIONAL AND TRAINING ACTIVITIES UNDER THE SUBPROGRAM

- 4.1 A plan to promote the subprogram nationally is being drawn up, as are specific plans for the priority basins. Use will be made of mass media (mainly radio), and promotional workshops will be organized during the first three years of execution of the program.
- 4.2 The promotional campaign will be a responsibility of the CU, which will contract the work out to the beneficiaries and coexecutors (grassroots organizations, NGOs, indigenous communities, town councils) and other entities at the local level. The promotional phase will be followed by the organization of producers through the contracting-out of services to the subprogram's coexecutors.
- 4.3 Financing will go to activities aimed at training the farmers, indigenous communities and municipalities, and technicians from the subprogram's coexecuting agencies. The specific activities to be funded by the subprogram are:
 - a. Organization of producers, help in preparing project abstracts, and training of beneficiaries in forest-grazing and agro-forestry techniques, management of nurseries, management of natural forests and forest plantations, and in the managerial and financial administration of farms.
 - b. Training of technical personnel from the coexecuting agencies and the program in technical and project administration topics.
- 4.4 Producers will be trained in two ways: (i) with direct on-farm assistance provided by extension agents from the coexecuting agencies; and (ii) through specialized firms or entities engaged at the request of the coexecuting agencies. Training for technicians will be provided through specialized firms or entities. The capacity of those firms or entities to deliver the training will be evaluated by the CU using criteria laid down in these Regulations, and they will be selected through a process of competitive bidding.

V. ACTIVITIES TO BE FINANCED UNDER THE SUBPROGRAM

A. Investments in private farms

- 5.1 Based on an analysis of actual land use in the program areas and the production systems wanted by farmers, production models had been prepared for the program's feasibility study. The four production systems and 11 subsystems preidentified and eligible for financing include the following:
- a. Forest-grazing systems. Subsystems for: sustainable extensive stock farming; improved beef-and-dairy farming; natural forests with grazing-broadleaved species, natural forest with grazing-pine trees. Financing will be available for: technical assistance and the following types of inputs: plants, seeds for trees and improved pastures, stakes for saplings, survey poles, barbed wire, staples, other small inputs and tools, and procurement-related transportation.
 - b. Agroforestry systems. These include subsystems for: improved subsistence farming and improved traditional farming. Financing will consist of: technical assistance, small tools, and such necessary inputs as: improved seeds, plants, stakes for saplings, survey poles, barbed wire, staples, and other materials for soil conservation, the marking out of contours, and procurement-related transportation.
 - c. Forest management systems. The subsystems include management of natural pine and broadleaf forests. Financing will be for: preparation of management plans, technical assistance and small tools, and inputs for fighting fires, diseases and pests.
 - d. Reforestation systems. The subsystems analyzed for the feasibility study included: plantations of broadleaf species for fuelwood and timber, and of multipurpose pine trees. Financing will be for: technical assistance, plants, survey poles, barbed wire, staples, other necessary inputs and tools, possible subsoil tillage, and transportation of inputs. Initially, Fondosilva will use the same criteria established in the Fund's financing regulations to make the funding from SIDA available under the program.
- 5.2 The financing received by each beneficiary will depend on the technical design and the amounts arrived at on the basis of the technical abstracts for each project. The producer may opt to be included in one or more of the preidentified production systems or subsystems. The models proposed are indicative, and how they are implemented will depend on the actual conditions on each farm, the owner's interest in different types of investment, and whether the existing production systems on the farms can realistically be changed within the five-year life of the program.

- 5.3 In year one of the program, tree nurseries will have to be established in areas accorded priority. Financing for these nurseries will come from Fondosilva and other sources to ensure that the program is satisfactorily implemented.
 - 5.4 The average costs and project loans reported annually by the coexecutors shall broadly correspond to the amounts calculated for the different models in the program's feasibility study, but may vary as between individual projects. Financing under the program will include technical assistance, forestry and soil and water conservation inputs and tools, as well as agricultural inputs that are strictly needed for the initial establishment of the new sustainable production systems.
 - 5.5 Beneficiary farmers will contribute the personal labor of themselves and their families. The program would not provide financing for pesticides and other agrochemicals. Since the primary goal of the program is to launch the introduction of new production systems, and not to continue to finance inputs viewed as part of the farmers' normal production, the total amount lent for agricultural inputs may not exceed 20% of the total cost of financing the subprogram (see Appendix 1).
 - 5.6 Eight percent of the financing will cover administrative costs incurred by the coexecuting agencies. Technical assistance to producers will be provided by consultants or firms specializing in extension work, NGOs, or other specialized entities, and will be supervised by the coexecuting agencies in accordance with the contents of the technical abstracts for each project.
 - 5.7 Period of execution. Depending on the subsystem models, the projects will be carried out in two to three years: the first year will be for introducing the improvements to each system, and the second and third for consolidation, management and maintenance. After the fifth year, no financing will be initiated for any new project. The technical assistance provided for the project must not exceed 18% of the financing received.
- B. Forestry development in indigenous communities
- 5.8 The program will finance plans for the management of natural forests; technical assistance; inputs and small tools for fire protection; minor expenditures on the rehabilitation of rural roads, including the rebuilding of bridges and drains); training in forest management and handicrafts production, and environmental education. The communities will contribute their labor for the protection and management of forests.

C. Municipal conservation works

- 5.9 Financing will be available for soil and water conservation works: control of gullies, protection of riverbeds and riverbed roads, on common or municipally owned land; also, for management of green belts and the planting of trees, bushes and ornamental plants in municipal parks. Eligible costs will include the engineering and construction of these works. In the projects involving forestation and the management of green belts, the labor will be contributed by the community.

VI. PREPARATION OF CONTRACTS FOR EXECUTION

- 6.1 The responsibilities of all participating agencies and beneficiaries shall be set forth in the specific contracts prepared during execution of the program and shall reflect the wording of these Regulations.
- 6.2 To execute investments under the subprogram, the following types of contract shall be drawn up, spelling out the terms on which the activities and responsibilities of the parties involved shall be carried out:
- a. Custody and administration contract for subprogram resources, to be drawn up between a commercial bank and the CU. This bank shall be selected by the National Technical Committee through a process of public competitive bidding, with the guarantee of the IDB.
 - b. Coexecution contracts for investments in private farms, to be drawn up between the CU and the coexecuting agencies (in the case of major projects, contracts may also be drawn up between the CU and private landowners, see paragraph 9.2) and the local financial entities.
 - c. Contracts covering activities to be carried out on private farms, to be signed between the coexecuting agencies and the small producers participating in project packages under the program.
 - d. Service contracts for promotional activities between the CU and specialized companies or entities (see chapter IV above); and contracts for organizing producers, preparing projects (see paragraph 5.4), and training, between the coexecuting agencies and individual extension agents, companies or specialized entities.
- 6.3 In the case of the forestry development projects in communities in Waspan, agreements would be signed between the local environmental

and natural resource committee in each community and the CU, as well as a contract between the committee and an NGO. Under the program, the communities would be assisted in becoming legally established so that over time they would be able to enter into contracts with the CU. For the municipal conservation projects, agreements will be drawn up between the municipalities and the CU following approval by the town councils of the projects being considered for financing.

VII. PARTICIPANTS IN THE SUBPROGRAM AND ELIGIBILITY CRITERIA

- 7.1 Under the subprogram, the direct beneficiaries of the investments in private farms are producers and rural families living in the areas of intervention. The projected target for joining is 4,700 individual producers on private farms, at a yearly rate of: 15% in the first year, coinciding with the main effort to promote activities and organize growers in preparation for implementation; 30% in the second year; 45% in the third year; and 10% in the fourth year.
- 7.2 The beneficiaries of indigenous forestry development will be 15 preidentified communities in the Waspán area of RAAN, comprising about 2,600 families.
- 7.3 The municipal conservation works would benefit about 20 municipalities and their inhabitants.
- 7.4 Eligibility criteria for beneficiaries. To be eligible for the program, producers must meet the following general criteria:
 - a. Be the legal or beneficiary owner of the farm or plot (producing documentation attesting to ownership of the land or evidence that title is being processed); an indigenous community preidentified for the program; or a municipality in the case of the municipal conservation projects.
 - b. Have satisfied the technical evaluation and project selection criteria.
 - c. Their projects must be located within the subprogram's priority areas and basins.
- 7.5 At least 60% of the beneficiaries in each basin or area of the subprogram must belong to low-income groups as defined by IDB criteria.
- 7.6 One of the requirements of the outreach activities will be for a specific extension project to address the needs of women producers

and heads of households. The program will promote more active involvement by women in investment activities, with emphasis on having loans for family farms signed by both husband and wife.

- 7.7 For the selection of beneficiaries, use shall be made of a prioritization scheme, presented in Appendix 2 to these Regulations, according to: (i) poverty level; (ii) percentage of the farm on which the beneficiary is interested in forestation or forest management; (iii) intensity of cropping or grazing on land suitable for forests; and (iv) score on municipal quality-of-life survey.

7.8 Responsibilities of beneficiaries:

- a. To make a commitment to use the resources exclusively for the purposes of the project submitted, in accordance with the farm management plan and the technical abstract.
- b. To accept the policies of the subprogram, the selection criteria, the implementation mechanisms, and the technical assistance and training program.
- c. To comply with any technical requirements set by the subprogram.
- d. To agree to other rules laid down in these Operating Regulations.

- 7.9 **Coexecuting agencies** are: for investments in private farms: (i) the producers' organizations, cooperatives, and associations; and (ii) NGOs and development agencies which demonstrate that they have the requisite technical capacity and meet the eligibility criteria stated in the Regulations. To strengthen local capacities, preference shall be given to local and/or departmental organizations in the selection of coexecutors.

- 7.10 The local committee will be responsible for implementing its indigenous forestry development projects with assistance from the NGO (see paragraph 6.3). For the municipal conservation projects, the municipalities will act as coexecutors.

- 7.11 Eligibility criteria for coexecuting agencies. To be eligible as coexecutors, organizations must comply with the following criteria:

- a. Be legally constituted.
- b. Have sufficient technical and administrative capacity to execute, monitor, and provide logistical support for projects, or be capable of doing so with the help of training funded by the program.

- c. Preferably be local and/or departmental organizations that are represented in the priority areas or basins in which the activities are to be carried out.
- d. Be able to produce financial statements, preferably audited for a three-year period, that suggest they would be capable of carrying out the actions proposed with subprogram financing.

7.12 Responsibilities of coexecuting agencies

- a. To accept the supervision of the CU and carry out its technical recommendations, in accordance with a contract to be subject to recertification based on a mid-term evaluation.
- b. To prepare annual investment plans and operating plans under which projects are carried out by groups of producers.
- c. To comply with the technical and financial execution arrangements provided for in these Operating Regulations.

7.13 Eligibility criteria for entities or individuals that are to provide technical assistance services and training. Participation is open to individual consultants, consulting firms, specialized organizations, and NGOs with experience in the specific subjects referred to above. They must meet the following criteria:

- a. Be legally constituted organizations.
- b. Possess more than two years' proven experience in carrying out soil conservation activities, forest-grazing and agroforestry systems, reforestation, and forest management, particularly with small rural farmers, grassroots organizations and indigenous communities.
- c. Demonstrate sufficient capacity to carry out training plans and programs and possess the necessary infrastructure and equipment.
- d. Be listed in MARENA's or INTA's register of technical assistance providers which is kept by the CU in the program areas.

7.14 The coexecuting agencies may also participate in providing technical assistance and training services provided they demonstrate that they have sufficient capacity for these activities.

VIII. EXECUTION OF THE SUBPROGRAM

- 8.1 Coordination of execution of the subprogram shall be entrusted to a Coordinating Unit (CU) for the program, which shall be created by a Ministerial Decree issued by the minister of MARENA. The CU shall be given full administrative and financial autonomy and shall be governed by these Operating Regulations. It shall have a national coordinator, a team of agroforestry professionals, and administrative and financial support staff. At the local level, five coordinators shall be appointed under the responsibility of a lead coordinator. At the end of the fifth year of the program, this Unit will disappear. The CU shall be the organization responsible for the overall administration and coordination of the program.
- 8.2 The chief functions of this office shall be:
- a. To coordinate the overall execution of program activities.
 - b. To manage the handling of the program's financial resources.
 - c. To prepare, for approval by the Technical Committee (TC)(see paragraph 8.4), the Annual Operating Plan and the annual budget that include the projects submitted by the coexecutors.
 - d. To handle the promotion of the program at the local level, by ensuring participation by the grass-roots organizations, NGOs, indigenous communities, and municipalities.
 - e. To keep a register of the extension agents, firms and other local entities that will be providing technical assistance and training services to the producers, as well as of the organizations or companies specializing in training technicians.
 - f. To conduct bidding, draw up the contracts and agreements needed for execution through the various coexecutors, and process the corresponding disbursements.
 - g. To coordinate with Fondosilva the financing mechanism that would be used initially for plantations and to propose an auction system for investments in forestation for approval by the TC (see paragraph 9.10).
 - h. To provide technical advice to the coexecuting agencies.
 - i. To keep the accounts of the program and act as liaison with the bank administering the program.
 - j. To track and supervise all activities in the components and prepare reports for MARENA, the TC, and the IDB.

- 8.3 MARENA shall nominate the Coordinator of the CU from a slate submitted by the Technical Committee. The Coordinator of the CU shall appoint the rest of the personnel. The Coordinator shall be authorized by the Minister of MARENA to sign contracts and act as the official representative of the program. Both the Coordinator and the staff of the CU will be appointed in accordance with rules set out in the loan contract.
- 8.4 A Technical Committee shall be created by Ministerial Decree at the time the program is launched. The TC shall be the program's ranking authority at the national level and shall be made up of the Director of the Forestry Service, representing the Minister, as chairman; MARENA's Local Director; the coordinator of Fondosilva; a representative of the PNDR, and two private-sector representatives with links to the program's activities. The Coordinator of the CU shall be an ex officio member of the TC, with the right to speak but not to vote, and shall act as its secretary.
- 8.5 The private-sector representatives shall be appointed annually by the Minister of MARENA from a slate of five names proposed by the organizations.
- 8.6 The functions of this Committee shall be:
- a. To approve the by-laws, annual operating plans, investment plans, and annual budgets, including the projects submitted by the coexecutors.
 - b. To approve the procedures for operating the program, including any amendments to the present Operating Regulations, and to ensure that they are followed.
 - c. To supervise the administration and use of the program's resources, including funds earmarked for lending that are placed with the Administrative Bank, and the application of idle funds.
 - d. To propose a slate of three nominees to the Minister of MARENA for the appointment of the Coordinator of the CU.
 - e. To supervise the work of the CU.
 - f. To select the coexecuting agencies in accordance with the eligibility criteria included in these Operating Regulations.
 - g. To resolve, as the first line of appeal, any problem that may arise between the CU and the coexecuting agencies.
 - h. To approve the audit reports and other documents related to the execution of the program.

- 8.7 The TC shall meet three times a year; it shall meet in special session at the request of one half plus one of its members, or of the CU.
- 8.8 At the outset of the program, the Local Committees (LCs) shall be created by Ministerial Decree. Each LC shall be composed of a mayor or elected councilman from among the town councils within a given basin, as chairperson; two representatives from the grass-roots organizations participating as coexecutors; MARENA's local delegate; a PNDR representative in areas served by the program; and the Local Coordinator of the program, as secretary.
- 8.9 The representatives from the local organizations shall be appointed by the Technical Committee from five names proposed by the coexecuting agencies themselves. The representatives of both the coexecuting agencies and the town councils shall be appointed for a term of one year which may be renewed.
- 8.10 In the case of the activities to be carried out with the indigenous communities in RAAN, the format will be an LC composed of the region's 15 participating communities.
- 8.11 The functions of the Local Committees shall be:
- a. To approve the by-laws.
 - b. To promote the program and thereby increase the number of participants within their jurisdiction.
 - c. To make the initial selection among, and recommend for approval by the TC, the applications from the coexecutors and individual participating producers, using the criteria laid down in these Operating Regulations.
 - d. To assist in solving possible problems at the local level.
 - e. To take part in the preparation of the annual operating plans and assist in monitoring the program.
- 8.12 The LCs shall meet monthly, and shall meet in special session at the request of one half plus one of their members, or of the program's Local Coordinator. When meetings are held, the program shall reimburse lodging, subsistence and travel expenses.

IX. OPERATING PROCEDURES

- 9.1 Receipt of applications. To join the subprogram, each producer shall apply to a prospective coexecuting agency using a simple form

to be designed by the CU. The coexecutor shall prepare and submit packages of applications from groups of producers to the Local Coordinator of the program in each basin, for evaluation by the LC.

- 9.2 Producers applying for loans in excess of US\$30,000 may submit their applications individually in accordance with the procedures described below.
- 9.3 Project formulation. All applicants shall submit a project abstract, which must be based on a farm management plan and shall be a prerequisite to be eligible for financing under the program. The preparation of applications for projects costing less than US\$30,000 may be financed from program funds and shall form part of the incentive to be granted to producers.
- 9.4 The technical abstracts must, as a minimum, contain the following information:
- Date of submission of the application.
 - Name of the applicant(s) and of the coexecuting agency.
 - Name and geographical location of the farm(s), following presentation of documents attesting to its/their legal status.
 - Name of the bank with which the coexecuting agency deals.
 - Investment plan, with appropriate details for each project or subsystem, in the event that participation is sought for a project in more than one subsystem.
 - Proposed terms of the loan.
 - Programming of activities.
 - Proposed amount of participation by the beneficiary (labor).
- 9.5 The potential beneficiaries may contract out the preparation of the technical abstracts to experts, consulting firms, NGOs, etc, and the coexecuting agencies will evaluate these abstracts. To speed up the preparation of the abstracts, the CU itself may also handle the awarding of contracts in areas of priority and disburse the funds for consulting services directly.
- 9.6 At the discretion of the participating producer or the coexecuting agency, these consultants and/or firms might also be hired to provide technical assistance during execution. In the same way, the coexecutors may furnish support in project preparation of direct technical assistance if they have qualified extension agents who are registered with the CU for the purposes of this program.

- 9.7 Approval of funds. Once the packages of technical abstracts from the producers have been compiled, the coexecuting agencies shall submit them for approval by the TC within 5 days.
- 9.8 Once these packages have been reviewed, there shall be three options: (i) they will be approved by the LC; (ii) request for additional information; and (iii) application denied. Once the additional information requested has been supplied, the Local Coordinator shall, within three days, process the coexecuting agency's entire package of abstracts for forwarding to the CU, where it shall be placed on the agenda for approval. Each decision by an LC shall be notified in writing to the coexecuting agencies.
- 9.9 Auction. An auction mechanism shall be developed for the initial financing of reforestation systems. The specific amount of money available, according to the annual operating plan, to finance packages submitted shall be published at the beginning of each year.
- 9.10 Each producer shall prepare his or her application, including the maximum percentage he or she would be contributing, and submit it to the LC. After its submission, the TC shall review it in accordance with the criteria for applicants' eligibility and sufficiency of detailed information and forward it to the CU with its recommendation, which, on the basis of the information provided, shall decide what projects are to be financed.
- 9.11 The program shall compile a high-to-low list so as to select those offering the highest percentage in descending order. The producers shall contribute a minimum of 32% of the total cost (representing the estimated share of labor in the cost of the investment). Any producers left without financing in a given year shall be included in the list of applicants for the following year.
- 9.12 A standard unit cost of reforestation will be developed as a benchmark for determining incentives in accordance with the guidelines proposed in the evaluation of Fondosilva by SIDA in November 1995.
- 9.13 Initially, the reforestation systems, which are being financed jointly with SIDA (particularly with respect to the recognition of expenses in 1995 and 1996 by the IDB) will be subject to the current regulations of Fondosilva, which is now administered by MARENA. These regulations specify that financing for producers is nonreimbursable, and covers one half of the investment costs (including labor) and the technical assistance in its entirety. When a contract is signed with a producer, the equivalent of 10% of the value of the incentive is initially advanced. Subsequent disbursements will cover works completed (see Appendix 4 of this Annex).
- 9.14 Proposals for investments in indigenous forestry development shall be made at the local level by the Local Environmental and Natural

Resources Committee, which will submit them to the CU. The municipal conservation works shall be submitted and approved at the request of the municipalities or a group of producers within a basin, through the municipality itself, and shall be approved in the first instance by the Local Committee. All the proposals shall be submitted to the CU, together with an abstract containing the technical details. The maximum amount of each individual project included under these works shall be US\$20,000. This amount shall be disbursed in three installments matching the implementation stages.

- 9.15 Appeals. If a producer's application is not recommended at the local level, he or she may appeal to the CU and subsequently to the TC.
- 9.16 Project supervision and monitoring. At the local level, responsibility for project monitoring rests primarily with the coexecuting agency, and, at the next higher level, with the Local Coordinator, who, jointly with the LC, shall supervise the performance of any contracts concluded, using a monitoring and evaluation system to be designed for this purpose by the CU.
- 9.17 The CU shall be responsible for overall monitoring and evaluation of the subprogram. In addition to the annual evaluations included in the Loan Contract, the CU may, at its own initiative or at the express request of the TC, commission partial or full internal monitoring studies of the subprogram.

X. ADMINISTRATIVE AND FINANCIAL MANAGEMENT OF PROGRAM RESOURCES

- 10.1 The resources of the program shall be managed through a commercial bank (hereinafter referred to as the Bank) in three separate accounts:
- (i) an account for SIDA funds, to be administered through Fondosilva, which will be operating by then;
 - (ii) an account for NDF funds that would be used to monitor the program, subprogram in protected areas, investments in municipal works, forestry development projects in communities in RAAN, and institutional strengthening;
 - (iii) an account for IDB funds, with subordinate accounts for program management and studies, and another for the natural resources subprogram; and
 - (iv) an account for local counterpart funds from the government.

- 10.2 The CU shall select the bank to manage the funds from external sources by a process of public competitive bidding. The selection criteria to be included in the call for bids shall be:
- a. geographical location of the bank's branch offices;
 - b. interest rate offered for deposits placed in savings accounts;
 - c. type of service offered for administering funds;
 - d. cost of the service offered.
- 10.3 A Contract for Custody and Administration of the Fund shall be signed between the CU and the Bank selected; it shall be governed by the country's legal provisions and include the objectives of the program, the financial resources available, the general principles for the management of funds, the selection of beneficiaries, the fees, and the effective period of the contract.
- 10.4 The administration of funds by the bank administering the resources shall include responsibility for holding the funds on deposit with maintenance of value and investment of surpluses to protect their value, the disbursement of approved funds to the producers or coexecutors selected, the transfer of funds to the branch office, savings cooperative, or other financial institutions, the management of the accounts, the acceptance of audits, and the provision of continuous and systematic reports on execution to the CU or at the request of the TC.
- 10.5 Disbursement process. Once the financing has been finalized, the administering Bank would draw on the resources under its custody and administration to make transfers to the coexecutors through the banks that they use, subject to authorization by the CU.
- 10.6 Transfers to the coexecuting agencies (both for investments in private farms and for indigenous communities) shall be made in accordance with the advances agreed in the contracts between the Bank, the CU and the coexecutors on the basis of requests from the CU, including the 8% in respect of the coexecutors' administrative expenses. The coexecutors are to disburse funds directly to the farmers pursuant to the terms of the contracts signed with the producers, and to check the vouchers submitted by the farmers for disbursement of subsequent advances.
- 10.7 In the case of conservation works, the CU, through the administering Bank, is to transfer funds directly to the bank used by the municipalities which are to carry out those works.
- 10.8 Repayments. For those investments in private farms that are subject to repayment, the period of repayment shall begin starting in the third year of execution of the investment. In all cases, the

full cost of the agricultural inputs shall be repaid. The cost corresponding to labor shall be regarded as the contribution of the participating farmers. All producers shall repay 20% of the total cost of inputs in all production systems. The entire cost of forest management plans, both for private farms and for indigenous communities, shall be subject to repayment. In the case of the reforestation subsystem, no repayment shall be required in view of the contribution expected from the producer. Farmers who fail to carry out the activities called for in their projects (i.e conservation works, plantations, etc.) shall be required to repay the full amount of their loan (see Appendix 3). A survival rate of at least 80% after the first dry season shall be considered as a criterion for compliance in the case of forest plantations. Investment in municipal conservation works will not be reimbursable.

- 10.9 The coexecuting agencies may not charges higher rates for administrative costs than the 8% set in these Operating Regulations.
- 10.10 The funds representing repayments by producers shall be placed in a separate account in the administering bank and shall be used to finance the same kind of activities on farms or in indigenous communities as are being carried out with funding from the subprogram. The GON shall submit a proposal on the disposition of repayments and arrangements for using them. One role that Fondosilva could play would be to use reimbursable resources for investments in projects on agroforestry and forest grazing farms that might be eligible for financing by Fondosilva in the future.

MAXIMA FOR GOVERNMENT COST-SHARING
(as a % and in US\$/ha)

SYSTEMS	LABOR	SOIL CONSERVATION AND FORESTRY INPUTS	AGRICULTURAL INPUTS	TECHNICAL ASSISTANCE	MAXIMUM GOVERNMENT CONTRIBUTION US\$/ha
Forest-grazing	0	100	<u>a/</u> <u>b/</u>	100	184
Agroforestry	0	100	<u>a/</u>	100	637
Forest management	0	100	0	100	35
Reforestation	0	variable <u>c/</u>	0	variable <u>c/</u>	<u>c/</u>

a/ Includes only inputs for project year 1 needed to establish the new production system. Will not include pesticides or agrochemicals. Its total may not exceed 20% of the loan.

b/ Includes inputs for pasture improvement (improved seeds, etc.) but not the purchase of cattle, etc.

c/ The proportion of reforestation projects financed will depend on the results of the auctions, but the maximum level of financing is estimated at US\$450/ha.

WEIGHTING OF PROJECT SELECTION CRITERIA

POVERTY LEVEL IN APPLICANT'S COMMUNITY	
Above the poverty level	2 points
Below the poverty level	6 points
Below the extreme poverty level	10 points

PERCENTAGE OF PROPERTY ON WHICH THE BENEFICIARY IS INTERESTED IN PLANTING OR MANAGING FORESTS	
1% to 5%	2 points
6% to 10%	4 points
11 to 15%	6 points
16% to 20%	8 points
20% and over	10 points

INTENSITY OF CROPPING OR GRAZING ON LAND SUITABLE FOR FORESTATION	
1 year of cropping or grazing/10 or more years fallow	2 points
1 year of cropping or grazing/7-10 years fallow	5 points
1 year of cropping or grazing/4-6 years fallow	7 points
1 year of cropping or grazing/1-3 years fallow	10 points

SCORE ON MUNICIPAL QUALITY-OF-LIFE SURVEY (CAS)	
Score on CAS survey	Weighting for selection
More than 550 points	2 points
450 to 550 points	6 points
Fewer than 450 points	10 points

RECOVERY OF INVESTMENTS d/

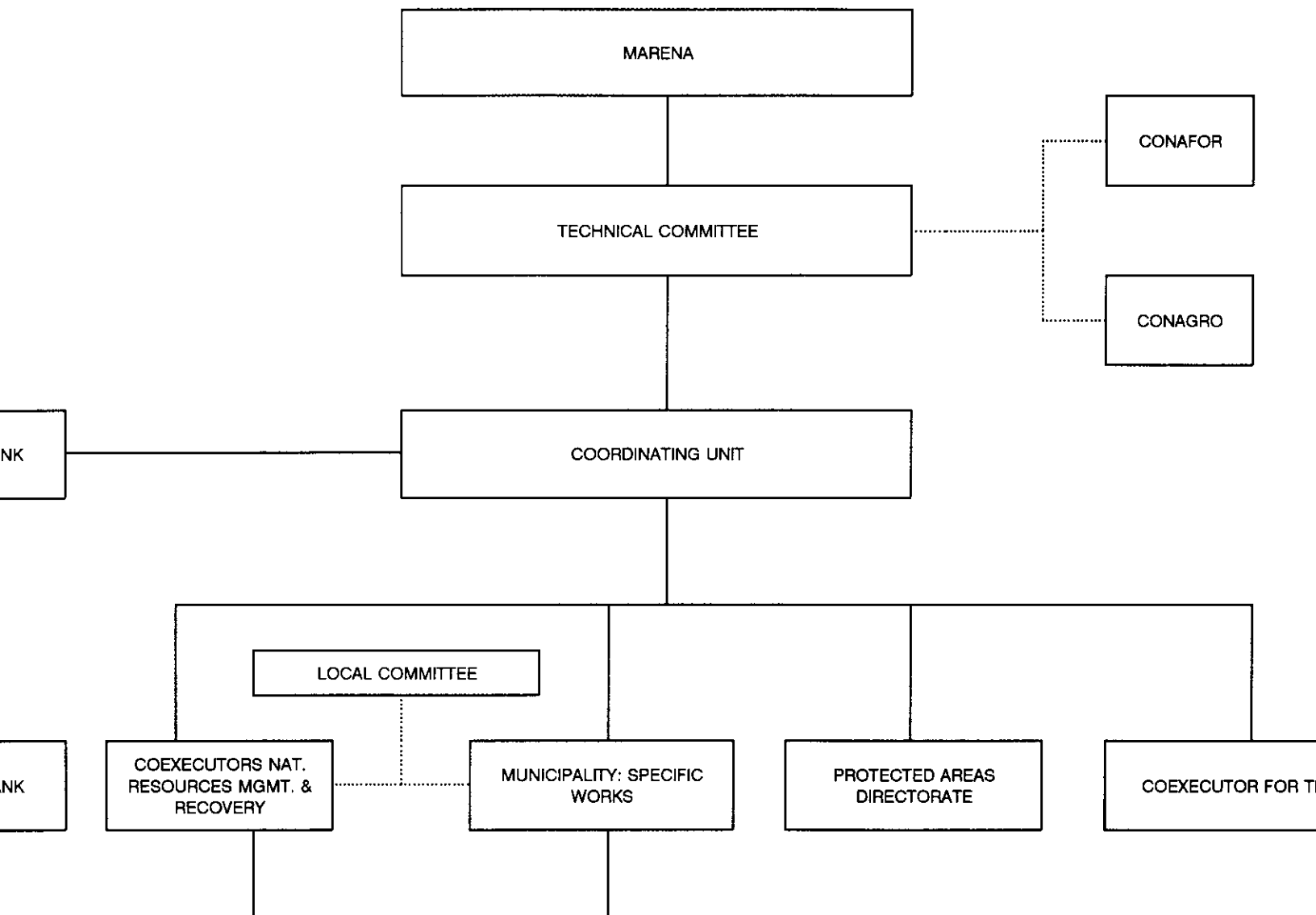
SYSTEMS	SOIL CONSERVATION AND FORESTRY INPUTS	AGRICULTURAL INPUTS	TECHNICAL ASSISTANCE	ADMINISTRATION
Forest-grazing	20%	100%		<u>a/</u>
Agroforestry	20%	100%		<u>a/</u>
Forest management	<u>c/</u>		77% <u>b/</u>	<u>a/</u>
Reforestation	<u>c/</u>		<u>c/</u>	<u>a/</u>

- a/ 8% of the loan, representing the administrative expenses of the coexecutors (grass-roots organizations, cooperatives, and NGOs) is recoverable.
- b/ 100% of the cost of the management plans is recoverable; technical assistance for fire, disease, and pest control is nonrecoverable (the weighted average works out at 77%).
- c/ Indirect recovery through taxes applies to all components. The most significant taxes are those on forestry operations, income, and sales of processed forest products.
- d/ Any beneficiaries who fail to carry out the investments being financed will be required to repay the full amount of their loan.

Fondosilva IMPLEMENTATION MECHANISM

1. The proceeds of the cofinancing from SIDA of Sweden will be used to fund activities in areas accorded priority under the program, based on economic and technical considerations and the criteria for technical assistance set out in the Fondosilva regulations. The areas will be selected in close cooperation with the program. The funding from Fondosilva will become available before the financing from the IDB. Accordingly, any expenses incurred in the 18-month period prior to approval of the loan by the IDB will be recognized as eligible expenses under the program.
2. Fondosilva and the program will finance two of the four production systems, which consist of reforestation and forest management. In the case of forest plantations, financing will cover start-up costs, including plants, land renewal, planting and replanting, and maintenance work over the three years. In the case of forest management, financing will be provided for management plans, forest protection, upgrading of plantation stock, and natural regeneration of pines.
3. Because Fondosilva has only been in existence since 1993, the present financing plan will continue to be used. This consists essentially of a nonreimbursable incentive amounting to 65% of the total per hectare cost incurred by the executing agencies (15% towards payment of all technical assistance and one half of all forestry investment). This incentive would be paid as follows: (i) 35% once it has been determined in the field that the plantation has been established or the forest-management activity completed (and includes a 10% advance payable upon signature of the forestation agreement with Fondosilva); (ii) 15% for forest-cultivation maintenance activities in years two and three, as two equal installments to be disbursed in the second half of each year, upon verification that the work has been done; and (iii) 15% as a payment of technical assistance by an expert registered with MARENA which would be disbursed as specified in the guarantee and upon approval by the producer, pursuant to the Fondosilva technical assistance manual.

**SCHEMATIC ARRANGEMENTS FOR EXECUTION:
SOCIOENVIRONMENTAL AND FORESTRY DEVELOPMENT PROGRAM**



I. BORROWER AND EXECUTING AGENCY

- 1.1 The Ministry of the Environment and Natural Resources (MARENA) was created in 1994 through Decree I-94 as a successor to the Institute for Natural Resources (IRENA), with the tasks of coordinating, directing, and promoting the country's environmental policy and the sustainable use of its natural resources.
- 1.2 The basic difference between IRENA and MARENA is that the former was an executing agency whereas MARENA is primarily a supervisory and policy-setting body.
- 1.3 MARENA's functions are to establish rules, strategies, plans, and policies for the management of the sector; to formulate technical rules and standards; to review environment-related legislation; to promote implementation of cross-sector programs; and to participate in the preparation of environmental protection projects.

A. Organizational structure

- 1.4 MARENA is still operating under the organic law creating IRENA, whose organizational structure included numerous departments and units reporting directly to the Minister, which did not make for cohesive and smooth management. Moreover, because of the Institute's inefficient administration, the outside agencies which provided it with support opted to create units and entities that paralleled the existing structure, or to execute projects directly, which compounded inefficiency and confusion within the Institute.
- 1.5 The new administration which took over MARENA made great strides toward improving the situation and is still refining the structure and operation of the Ministry. With outside help, but primarily at its own initiative, it is working on a final draft of a new organic law for the Ministry, with an improved structure which is in the process of being implemented.
- 1.6 MARENA's new structure comprises three substantive directorates: Protected Areas, Fisheries and Fauna; Forestry; and the Environment. There are also two general support divisions, one for Administration and Finance and one for Planning. Internal Audit and Public Relations round out the structure of the Ministry.
- 1.7 At the local level, MARENA maintains offices in all 17 departments, under the Directorate of Local Coordination in Managua.
- 1.8 MARENA's new organic law is expected to be approved in the course of this year.

- 1.9 **Directorate of Protected Areas, Fisheries and Fauna.** Its objective is to formulate rules, policies, and strategies for the protection, management, and conservation of the country's protected wilderness areas and its fisheries and wildlife resources.
- 1.10 There are at present no legal rules establishing procedures for declaring protected areas and national parks, nor any prerequisites for such declarations. The protected areas all lack management plans, only eight have forest rangers, and only one has facilities for receiving visitors.
- 1.11 The directorate is managing seven projects, all financed by foreign agencies. Two are for institutional strengthening and the others for managing protected areas. This directorate needs a process of gradual development to fulfill its mission. As part of this process, the proposed program will assist with some basic consulting services on policy development, legal aspects, and physical evaluation of the areas. The key feature, however, is the provision for consultant services to help MARENA in its efforts to establish foundations to manage protected areas; these in turn will seek their own financing and have greater flexibility of action. This is arguably the only way the government can avoid shouldering the budgetary burden involved, which up to now has been financed by foreign agencies.
- 1.12 **Directorate of the Environment.** Its mission is to serve as the nation's environmental manager by issuing rules and regulations and ensuring that activities which affect the quality of the environment are supervised; it also promotes and assures implementation of the PAA-NIC, which embodies the country's environmental strategy and policy.
- 1.13 The directorate has a professional team that could be said to have a good training profile but to be short on experience. The directorate's working plan is for the most part supported by external agencies through consultancies on environmental quality (DANIDA) and sustainable use of water resources (KTH-SWEDEN). With their help, work is moving ahead on the Water Resources Action Plan and a Water Law; a nationwide inventory of water resources; the General Law on the Environment, which is being discussed by a mixed commission; environmental zoning for hydrocarbons; and preparation of the Environmental Impact Assessment System. In addition, in coordination with the INAA, it is in the process of publishing standards on effluent discharges, a key document for execution of the Lake Managua Basin Program currently being formulated.
- 1.14 Considering the short time this directorate has been operating, it has chalked up substantial progress and useful gains; however, its funding still comes from foreign agencies, which leaves it in a somewhat vulnerable situation.

- 1.15 **Forestry Directorate.** The mission of this directorate is to shape policy guidelines and strategies for the management and sustainable use of the country's forest resources, taking Nicaragua's Forestry Action Plan as its reference point (PAF-NIC). This mission is being pursued through three departments:
- a. **Forestry Rules and Laws.** This department is in the process of drafting the Forestry Law, including its regulations; reviewing and approving applications for the use of forests; and approving management plans.
 - b. **Extension.** Drafts technical and methodological systems for use in the field and for training technical field personnel.
 - c. **Forest Planning.** Proposes forest management plans and monitors agricultural boundaries.
- 1.16 The DGF also maintains a timber laboratory, workshops, forest nurseries, a genetic plant-breeding center and a seed bank.
- 1.17 The DGF contains the bulk of the personnel in the substantive departments, with 46 employees at headquarters and about 70 assigned locally. The staff shake-down is continuing, and a further reduction is anticipated for the coming year. The staff in the directorate's local office are being transferred to the Directorate of Local Coordination and will assist the coordinators of the proposed Program in supervising and monitoring the activities and actions to be carried out.
- 1.18 Of the total of 28 projects currently being executed by MARENA, 14 come directly under the DGF and for the most part involve social forestry. The largest of these are ADFOREST and FONDOSILVA, both set up by SIDA with separate structures, which is partly to blame for the problems with the institution's rather diffuse administration.
- 1.19 ADFOREST was created and financed by SIDA in 1992 as a state-owned enterprise to identify, demarcate, and register the state's forest lands, while helping to meet the national timber industry's demand for raw material and to export any surplus. According to the consultants' study, ADFOREST never achieved its goals effectively but operated as a timber marketing company administratively separate from MARENA.
- 1.20 As part of the reorganization, ADFOREST will be operating under the DGF's umbrella rather than as an independent entity. In addition, its main objectives will be restricted to demarcation and promotion and not to the direct harvesting of timber. These measures will help to consolidate MARENA as an institution and enable it to achieve its objectives more effectively. Also under joint study

with MEDE is the idea of segregating the functions of demarcating forest areas and forest-use zones, which are properly MARENA's, from that of granting logging permits in areas previously authorized by MARENA, which would move to MEDE.

- 1.21 FONDOSILVA is a fund within MARENA, set up in 1993 as a result of one of the recommendations of the PAF-NIC to finance forest plantations and the management of existing forests up to a limit of 15 hectares per application. It has so far been funded by SIDA, with contributions of US\$477,000 for 1993, US\$134,000 for 1994, and US\$583,000 for 1995. The unit which administers the fund is composed of six officials, which is felt to be more than enough for current operations.
- 1.22 The fund succeeded in financing some 1,216 hectares of plantations and placing 973 hectares under management, using virtually all available funds in the process. Financing is 70% in the form of direct incentives and technical assistance, the other 30% being contributed by the beneficiary. The subsidy was justified on the grounds that: (a) the banks do not lend for this kind of operation, nor do they accept standing timber as security; and (b) an incentive was needed to convince farmers to set aside part of their labor and property for this purpose, as it takes longer to yield benefits than normal farming. The project can be declared a success since it exceeded its targets and still has outstanding applications for more than 35,000 hectares, mostly for plantations, which could not be processed as SIDA was unable to make funds available in time. Given the success of the fund's operation, the demand it generated, and its goal, which is very similar to that of the investments in forest plantations included in the proposed program, many of the same concepts will be used, jointly with SIDA and under common Operating Regulations, in executing these investments.

B. Financial administration

- 1.23 The Administration and Finance Department reports hierarchically to MARENA's senior management and is made up of the administration, finance, and human resources divisions. The division has been going through a restructuring and down-sizing process which is not yet complete. During this process, divisions and functions have been consolidated, resulting in better financial control of MARENA's activities, especially for the projects that were previously managed separately from the institution's other disbursements.
- 1.24 However, the systems that are being used are still not suited to the institution as restructured. The personnel who were trained on the new computer system, purchased with a grant from AID, were retired, and the existing staff need retraining. DANIDA is in the process of designing technical assistance to improve the financial system and controls, and this will be ready by the end of this

year. In addition, the division is receiving assistance from SIDA in the form of salary supplements for certain members of its staff.

- 1.25 The division currently has a total staff of 54, which is felt to be too much for the new MARENA. Most are in services and administration and are being down-sized. Ongoing improvements in the disbursement systems are expected to result in a further reduction of at least 20% within the next two years.
- 1.26 Because of the existing weaknesses and the lengthy delays in the approval and processing of paperwork and disbursements, the Coordinating Unit was structured as an administratively and financially independent entity. The goal was to streamline its personnel, actions, and disbursements, since the program depends for its success on timely responses to immutable agricultural cycles.

C. Personnel

- 1.27 MARENA's personnel is in the process of evaluation, adjustment, and voluntary retirements. During 1994, MARENA had a total staff of 1,253, of whom 919 were on the payroll and 334 were paid through its investment projects. By August 1995 the staff had been cut to a total of 655, a reduction of 48%. This includes some 190 employees of specific projects being executed directly by MARENA, who were transferred to the PNDR, a new executing agency. Of the total, 83% are in the substantive divisions and the remainder in the support departments, including the office of the Minister. MARENA maintains 17 local offices (one in each region), with an average of one official per municipality and a skeleton staff, for a total complement of 122.
- 1.28 The expectation for 1996 is a further reduction to a total of about 600, or 8%, which would for the most part come from administrative areas, the seed bank, and the zoological side. It is believed that this reduction will be complete inside two years, once the few projects that MARENA is executing directly are finished or have been transferred to other executing entities.
- 1.29 During the process of down-sizing and voluntary retirements, a number of skilled professionals retired and, although MARENA does have qualified personnel, they are short on experience. This shortage is being made good through consultancies and qualified personnel paid for by foreign agencies. MARENA will need a period of adjustment before its staff begins to operate smoothly and efficiently.

D. Budget and operations

- 1.30 MARENA's budget is mostly underwritten by foreign grants. Foreign grants accounted for 61.15% of its budget in 1993 and increased to 70.75% in 1994. The proportion is expected to decline to 64.6% for

1995 (see table below). Most of these grants come from Europe, with the United States in second place. The balance of MARENA's funding is self-generated (approximately 7%) or allocated from the government budget. Its internal resources are generated by fines and by the sale of permits, seeds, and seedlings; projected receipts are taken into account in calculating budget allocations from MINFIN.

MARENA
SCHEDULE OF INVESTMENTS AND EXPENSES
(in US\$000)

	1993 Actual	%	1994 Actual	%	1995 Budget	%
INVESTMENTS						
Grants	11,904,399	61.1	11,358,440	70.7	9,168,905	64.6
Ministry revenues	1,393,380	7.2	980,484	6.1	1,012,107	7.1
Budget	3,472,147	17.8	1,721,798	10.7	2,221,178	15.7
Subtotal	16,769,926	86.1	14,060,722	87.5	12,421,190	87.4
EXPENSES						
Personal services	1,311,155	6.7	842,028	5.2	759,998	5.4
Non-personal services	762,647	3.9	745,916	4.7	636,503	4.5
Materials and supplies	278,280	1.4	198,269	1.3	179,155	1.3
Transfers	346,759	1.9	208,305	1.3	180,051	1.2
Subtotal	2,698,841	13.9	1,994,518	12.5	1,755,707	12.6
TOTALS	19,468,767	100.0	16,055,240	100.0	14,176,897	100.0

NOTA: 1993 Exchange rate: US\$1=6.15
1994 Exchange rate: US\$1=6.74
1995 Exchange rate: US\$1=7.55

- 1.31 Of the total budget, 87%-88% goes to finance investment expenses; only 12% to 13% is earmarked to fund current expenses, most of which consist of personal costs and social security contributions and are financed by the government through allocations from the central budget.
- 1.32 These investment expenditures are currently spread among some 28 projects. Of these, 10 (36%) represent consultancies and studies for institutional strengthening, which MARENA classifies as projects. It is these consultancies that are helping the various departments to carry out their mandates and training them in drawing up plans, drafting legislation, restructuring, etc. Of the other projects, eight (21%) are in the process of being transferred to the PNDR under MARENA's new policy.
- 1.33 The breakdown of the remaining 10 projects (43%) is as follows:
(a) five are actually programs, such as reserves, parks, and forest

areas, which functionally come under MARENA but owing to a lack of funds are financed by foreign agencies – the government is looking for ways (e.g. foundations) to involve the private sector in their administration and management; (b) the seed bank funded by DANIDA, which will be transferred to another entity, as will the zoological garden; (c) ADFOREST, financed by SIDA, some of whose functions will be moved to MEDE and others consolidated with MARENA; (d) a small project which has already been transferred to an NGO; (e) the IDB pilot project; and (f) a project directly related to MARENA's functions.

- 1.34 Given the new policy to have projects carried out at field level, and by organizations with closer ties to local entities, MARENA will have to evaluate the new executors to find out whether they have the capacity and experience to do the work. This is of key importance since MARENA is responsible for monitoring the performance and activities of all projects in this subsector.

**MARENA
SCHEDULE OF PROJECTIONS
(in US\$000s)**

	1996	1997	1998	1999	2000
Current expenses	1,755.71	1,755.71	1,755.71	1,755.71	1,755.71
Existing investments:					
Counterpart funds	2,604.00	2,611.88	2,107.89	1,515.42	1,215.44
External funds	8,555.85	7,075.20	2,225.24	632.98	244.43
New investments:					
External funds	2,444.86	933.35	937.26	689.18	684.91
Counterpart funds	583.70	191.69	215.78	127.07	230.19
SUBTOTAL	15,944.12	12,567.83	5,238.88	4,720.36	4,130.68
Forestry development program: (direct costs)					
IDB, SIDA & NDF	2,958.00	5,365.00	5,408.00	2,087.00	1,362.00
Counterpart 1/	399.00	827.00	920.00	276.00	48.00
SUBTOTAL	3,357.00	6,192.00	7,328.00	2,363.00	1,410.00

1/ Includes US\$2.14 million in contributions from beneficiary campesinos

- 1.35 MARENA's projections are based on the current policy of not raising current expenses. The future reductions in strength will be offset by higher operating outlays on materials and inputs that MARENA is presently lacking. Current expenses will therefore remain at their 1995 level.
- 1.36 Investment expenses, however, show a slight increase in 1996 (excluding the proposed program) due to some investments in studies, rehabilitation of the building, and the start-up of two investment projects in forest management and comprehensive development, with a

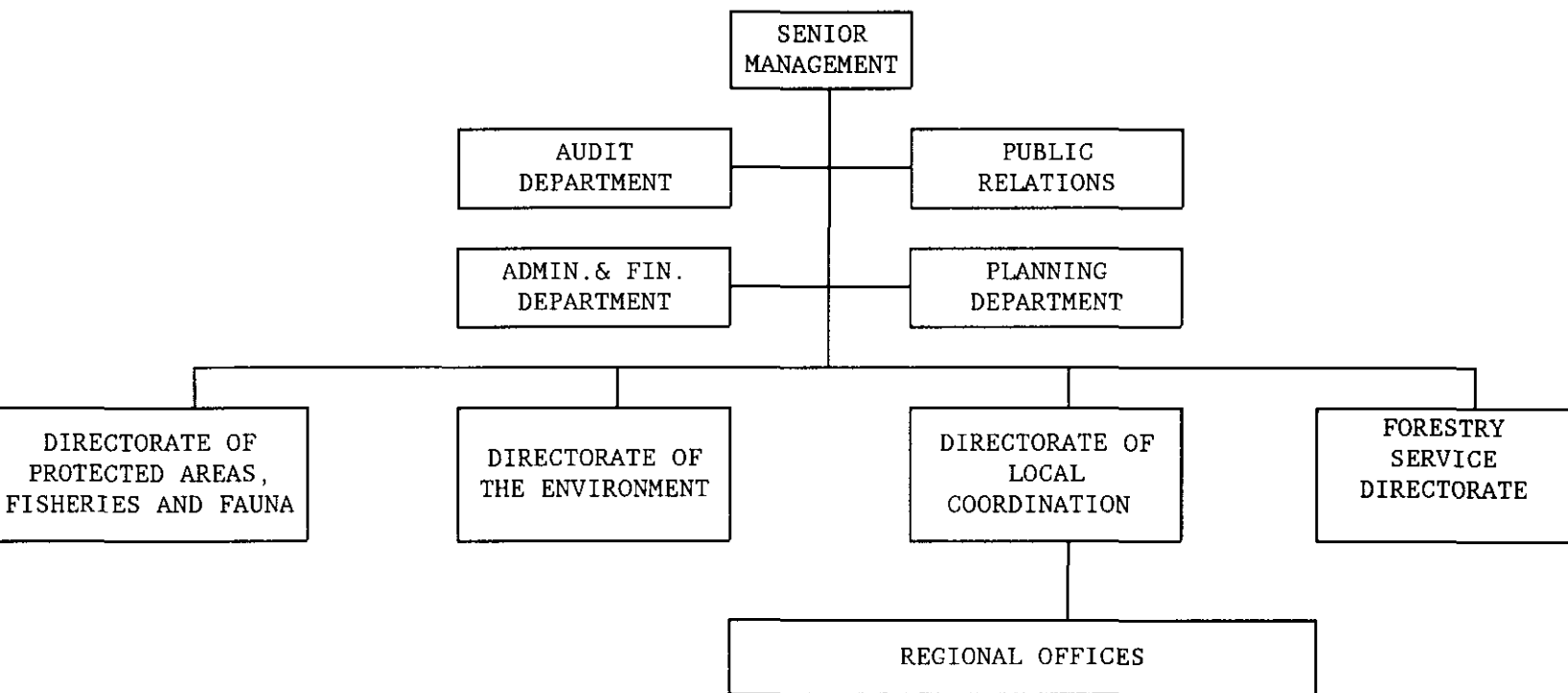
total cost of US\$4.3 million over five years. It is worth mentioning that there is not a single investment financed solely from domestic funds; instead, all investments are funded by foreign grants, backed up by local counterpart funds. The forestry development program would be the only one to appear on the books as a charge against the state.

- 1.37 Excluding the forestry development program, investments are projected to decline from their 1996 level by 21% in 1997, 68% in 1998, and 75% in the year 2000. This is the result of reductions in the foreign grants MARENA is receiving, which are being used to support not only activities on specific projects that are now being transferred to other institutions, but also activities that are functionally part of its mandate, such as the various policy and legislative studies, as well as its work on protected areas and conservation reserves, where ways are being sought to increase the involvement of the private sector and thereby ease public spending.

E. Conclusions

- 1.38 MARENA has made major strides toward rehabilitating and restructuring the new institution. This restructuring needs to be continued more systematically under the same policy, to permit gradual change and give employees a chance to blend into a cohesive structure with coordinated and consolidated work plans. The institution will need to make sound choices and to coordinate the consultancies and training that are offered so that it can absorb them and put them to best advantage.
- 1.39 The second issue is financial resources. The government will have to start addressing MARENA's financial responsibilities and vote it an adequate budget. Grants from foreign agencies will not continue at the same pace, and the efforts and gains made so far will be largely wasted. MARENA will need to examine how best to involve the private sector, whether through foundations or some other expedient, in order to take up the slack in the funding of programs in the protected areas and reserves and to avoid backsliding from the gains made to date.

MINISTRY OF THE ENVIRONMENT AND NATURAL RESOURCES (MARENA)
ORGANIZATIONAL STRUCTURE AS OF JUNE 1995



PROPOSED RESOLUTION

NICARAGUA. LOAN /SF-NI TO THE REPUBLICA DE NICARAGUA
(Socioenvironmental and Forestry Development 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 República de Nicaragua, as Borrower, for the purpose of granting it a financing to cooperate in the execution of a Socioenvironmental and Forestry Development Program. Such financing will be for the amount of up to US\$15,300,000, or its equivalent in other currencies, except that of Nicaragua, which are part of the resources of the Fund for Special Operations, and will be subject to the "Special Contractual Conditions" and the "Terms and Financial Conditions" of the Executive Summary of the Loan Proposal.