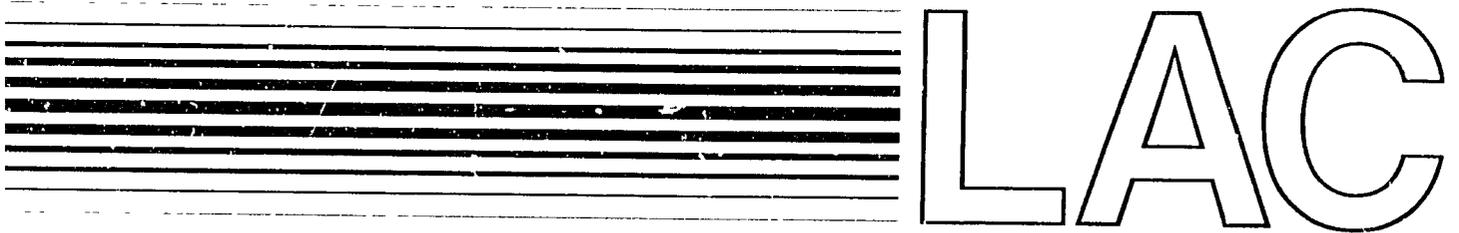


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LATIN AMERICA AND THE CARIBBEAN

EDUCATION AND HUMAN RESOURCES
TECHNICAL SERVICES PROJECT

NICARAGUA PRIMARY EDUCATION SUBSECTOR ASSESSMENT
1990

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Nicaragua Primary Education Subsector Assessment

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LIST OF ACRONYMS

ALFALIT	Alfabetización y Literatura
CCPF	Consejo Consultivo de Padres de Familia
CDS	Comité de Defensa Sandinista
CELADE	Centro Latinoamericano de Demografía
CEPAD	Consejo de Iglesias Evangélico Pro-Alianza Denominacional
CNA	Cruzada Nacional de Alfabetización
EBA	Educación Básica de Adultos
EPB	Educación Popular Básica al Campo
FSLN	Frente Sandinista de Liberación Nacional
FSMN	Frente Sindicalista de Maestros Nicaraguenses
GER	Gross Enrollment Rates
GDP	Gross Domestic Product
GON	Government of Nicaragua
IBD	International Development Bank
INEC	Instituto Nacional de Estadísticas y Censos
MBO	Management By Objectives
MED	Ministry of Education/Ministerio de Educación
MIS	Management Information System
OIM	Organización Internacional para las Migraciones
PEBI	Programa Educativo Bilingüe Intercultural
SIF	Social Investment Fund
SPP	Secretaría de Planificación y Presupuesto
Unesco	United Nations Education Science and Culture Organization
Unicef	United Nations International Childrens Education Fund
UNO	Unión Nacional de Oposición
USAID	United States Agency for International Development
WID	Women In Development

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First we would like to thank the children, parents, staff and directors of the Nicaraguan primary schools and teacher training centers who participated in the study. We sincerely appreciate the work and energy expended and cooperation they extended to our team throughout the duration of the project.

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While the conclusions are the authors own, to the extent that this assessment provides useful information for enhancing Nicaraguan primary education, all these people must be given full credit.



Children sitting on boards in a private home examining the new textbooks



Children line up for classes in a converted market



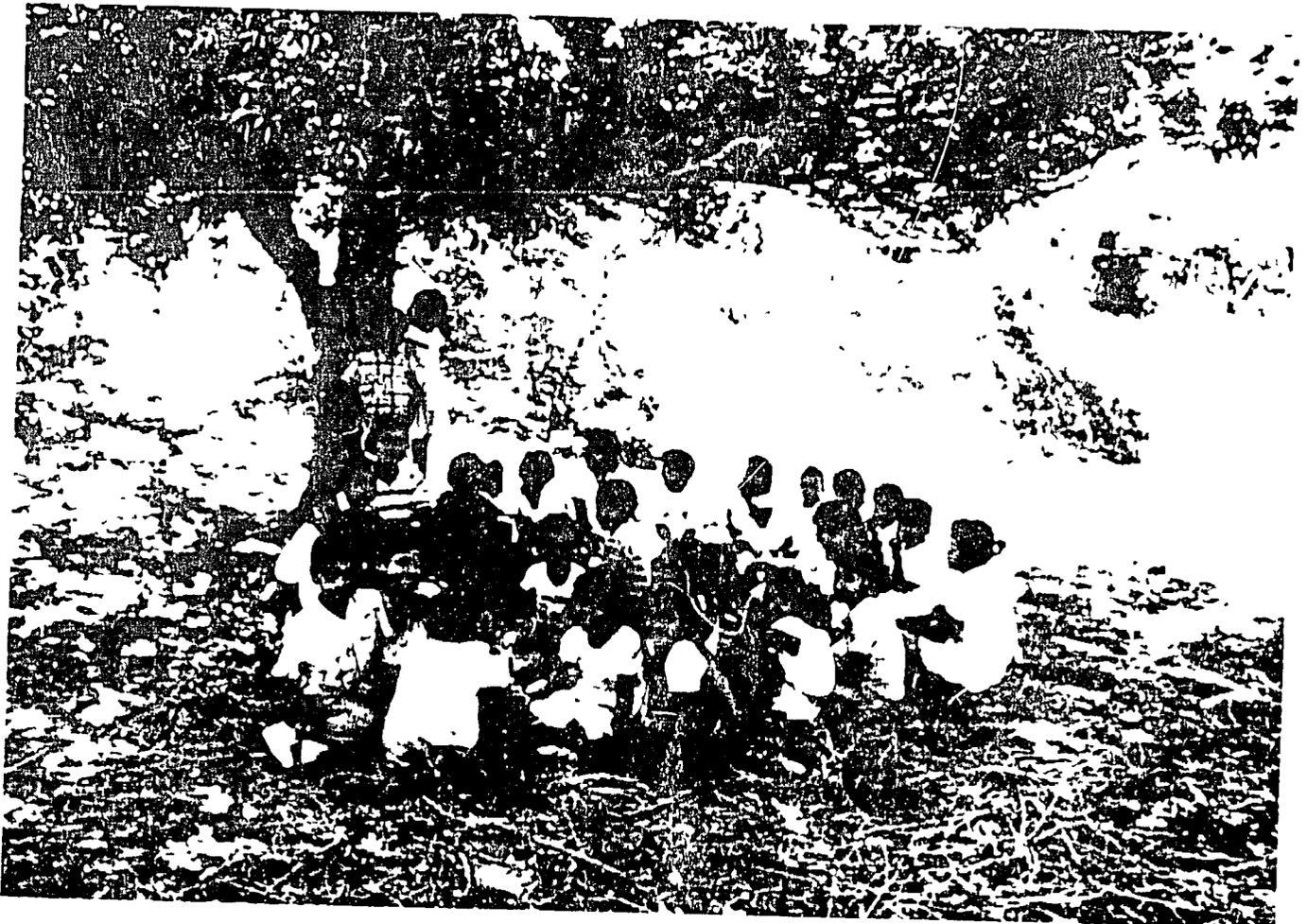
At some schools, desks are taken home to avoid theft



Space is lacking in some classrooms



Faces of the future



Where there is no school building, classes are held outside

EXECUTIVE SUMMARY

A. Introduction

In January of 1991, under the auspices of USAID/Nicaragua, a team was fielded to conduct a sub-sector assessment of Nicaraguan primary education. The study, which was carried out over a six-week period in February and March, focused on the specific areas within the education system that had the potential for increasing system efficiency. The team was contracted through the mechanism of the Education and Human Resources Technical Services project held by the Academy for Educational Development and consisted of personnel from AED and its subcontractors, Juárez and Associates and Research Triangle Institute. The assessment had the objective of providing information on the status of basic education, including primary schooling, and both literacy and primary school equivalency for adults.

B. Background

In Nicaragua, education has been hard hit by the political and economic situation of the country. Rapid expansion in the early 1980s created a cumbersome and inefficient educational bureaucracy. In recent years, teacher turnover has been high, school books reflected a particular ideological position, school buildings have deteriorated as a result of the war, and teachers salaries have dropped drastically.

USAID has made a commitment to education through investing in textbooks in a program designed to provide books for all school children at the primary level. However, these books have been developed from texts in other Latin American nations as a stop-gap measure to insure instructional materials for Nicaraguan school children. Estimates are that the books will last two or three years, at best. Therefore, it is necessary to look for ways to provide truly Nicaraguan instructional materials in a manner that will be sustainable in the future.

Similarly, there are investments in administration, curriculum and instruction, teacher training, and adult education that can improve the quality and efficiency of basic education. At present, however, little is known about either the participants in the teaching-learning process or the infrastructure in which schooling in Nicaragua takes place.

The Ministry of Education, together with AID, has identified nine key priority areas for investment in education: the current status of educational access and efficiency; the legal framework for educational development; the costs and financing of primary education; the MED administrative structure; curriculum and instruction; teacher training; adult education; and school-community relationships. This document summarizes the findings and recommendations of the team in these areas. Detailed findings and recommendations are found in the sub-sector assessment itself.

C. Study Design

The study was carried out by a team of eight international and five Nicaraguan educators, each with extensive experience in Latin American primary education. Methodologically, the study used multiple data sources. Data collection techniques included: review of documents; interviews with key personnel within and outside the MED and interviews with teachers, principals, and community members; participant observation at the Central MED, where the team had an office, and in schools and communities. In order to assure consistency of the information collected, the triangulation strategy was employed in which the same topics were investigated through different sources and areas of investigation overlapped so that different team members examined the same phenomena from their particular area of expertise.

D. Major Findings and Recommendations

1. EDUCATIONAL FINANCING

Findings:

General Socio-economic Environment: From 1980 to 1989, the average real public sector salary fell by over 90%: in 1989. Teachers' salaries fell even more than the average. The average number of calories consumed per-day by an individual, as a percent of the minimum required level (1850 calories) also dropped. From 1985 to 1989 there was a loss from an average consumption of 123% of the minimum to an average of only 86% of the minimum.

Educational Expenditures: In 1970 total educational expenditures equalled C\$ 454 million (all figures in 1980 cordobas), about 18% of total government expenditures and 2.3% of GDP. By 1978 education's share of GDP had grown modestly from 2.3% in 1970 to 2.6%. By 1984 educational spending reached an all-time high of C\$1337 million, or 6% of GDP, in real terms equal to three times what had been spent in 1970.

By 1989 Education's share of GDP had fallen back to slightly below their level in 1970. Primary schooling was hit much harder than education overall, as total primary education expenditures were one-third of their 1970 level. On a per-pupil basis, expenditures were only 15% of their level two decades earlier.

Education Budget: In 1990, 87.5% of the education budget was devoted to salaries; the other 12.5% of the recurrent budget breaks down as follows: 7.1% on electricity and water; 1.8% on printing; 1.6% on travel and gas; 0.4% on graphic art; and 0.3% on pencils. School texts received only 0.04% and school maintenance 0.03%. In the 1991 budget, MED initially asked for about US\$115 million, was cut back to US\$64 million, and finally was given another US\$4 million by the Assembly.

Options:

Use non-project assistance to promote school maintenance and school repair, and a teacher incentive package (decreasing share over five years possibly based on a recertification program). If the economy improves, teachers will leave the profession for better opportunities. Unless the conditions of service improve for teachers, the deficit of trained teachers will notably increase.

There are two sources for the additional funding in basic education: inter-sectoral reallocations within the government budget, the chief candidate being defense, which in 1990 still received about 35% of the government budget (In 1983 defense took 18% of the government budget, by 1987 it reached 45%.); additional tax or fee revenue from the recent tax reform which may yield increased revenues, or from privatization of some state-run enterprises, or from room created for additional taxation if the economy stabilizes and turns around.

2. SCHOOL AND COMMUNITY

Findings:

Poverty in Nicaragua is widespread and increasing at an unknown rate. High rates of malnutrition are a strong indicator of the deteriorating economic circumstances in which most Nicaragua families live. Stunting is the principal nutritional problem, affecting 30-35% of the children in marginal and poor areas of the country. The educational consequences of stunted growth in school-age children include poor cognitive abilities, decreased aerobic activities, and significant reduction in alertness. Important health effects are increased morbidity and mortality rates, a 30% increase in time needed to recuperate from frequent diarrheal episodes, and increased chances that acute respiratory infections turn into pneumonia. All of these consequences have immediate bearing on learning ability, school achievement, grade repetition rates, and school desertion.

The percentage of children who are underweight or suffering from physical wasting as a consequence of malnutrition is not particularly high. As a result, the vast majority of Nicaraguan children do not appear malnourished, and it is only when height for age is measured that the extremely high rates of stunting become apparent.

Options:

In order to reverse the nutritional decline and thereby increase the efficiency of other education interventions, the Ministry of Education and other donors, especially those traditionally involved in school nutrition, should collaborate on investment in school feeding programs. Such programs should be designed and implemented to provide an adequate quantity of animal protein to counter the negative effects of stunting.

3. ACCESS AND EFFICIENCY

Findings:

Nicaragua, at present has an enrolled primary school population of 648,277. It is impossible to obtain an accurate estimate of the number of eligible primary students. This reflects an annual growth rate of 3.1% for the decade of the 1980s. Although it is estimated that student growth rate will fall to 2.8% for the next decade, this will still increase the school population to 855,200 by the year 2000. Using the pupil teacher ratio of 34 to 1, an additional 6086 classrooms would be needed in the next ten years. In terms of gross enrollment rates, Nicaragua compares favorably to other Central American countries in that over 90% of the estimated school age population enrolls in school. These rates are consistent for both males and females and for urban and rural dwellers.

With the influx of in-migration, however, certain regions have not been able to enroll all of the children seeking places. In Juigalpa, for example, children had to be turned away as preparations had been made for a 5% increase in student population and a 50% increase was experienced.

Conditions within the schools are also precarious. The Ministry of Education estimates that 30% of its 10,041 classrooms require renovation. In addition, it is estimated that more than half of the student population are without desks. Vandalism is widespread in schools and in many areas students are required to take their desks home after school to protect them. With the exception of blackboards, instructional aids are generally not available in the classroom for fear of destruction.

Internal efficiency has been extremely low since the 1970s and has remained equally low. Nicaragua currently has the lowest internal efficiency in Central America. Approximately 22% of those entering first grade complete a sixth grade education and 16 student/years of effort are needed to produce one sixth grade graduate. Averages for Central America are about 550 graduates/1000 compared to Nicaragua's 223, and 10 student years of effort for each sixth grade graduate.

There are large numbers of overage children present in the Nicaraguan primary education system. More than 25% of the space in first grade is taken up by children who are two or more years older than the seven years of age norm. This translates into a repetition rate of between 40%-50%. Estimates are tenuous, however, because data on the entire school age population is out of date as the most recent Nicaraguan population census was conducted in 1971.

A possible cause of dropouts is the increase in the number of matrifocal families now estimated at 30% of Nicaraguan households. This situation puts increased pressure on children to join the work force and spend time taking care of younger siblings with a negative effect on school attendance and achievement.

Preparatory Activities:

Prior to a major investment in improving educational efficiency, a study of the extent of school repetition and dropout is necessary to correctly target interventions. Owing to the lack of current census data, the study should be carried out with a representative sample of communities to determine both the nature of the school age population and the causes and extent of repetition and dropout on a national basis.

A study of the direct and opportunity costs of enrolling and maintaining children in primary school should be conducted. Of special focus should be the economic contributions of children in matrifocal families in Nicaragua and incentives for keeping children in school.

Options:

Investment in school renovation and perhaps construction will be necessary to meet the increased demand for schooling in the next decade. The increases owing to immigration of expatriated Nicaraguans make such investment an immediate priority in some regions of the country.

Classroom renovation, especially the provision of student furniture is also a high priority for the MED. Such an investment can have a high impact and, as this is seen as a need by community members, the potential for local participation is high. Such furniture might be in the form of modular desks and tables which would encourage small group work and peer teaching activities.

4. EDUCATIONAL ADMINISTRATION

Findings:

Confused and contradictory legal foundations impede reform, regulation, and clear lines of authority for Nicaraguan Ministry of Education.

Central MED structure impedes appropriate integration and coordination of activities across functional units.

Key MED processes, organizational operations, and management tools are out of date and ill defined.

MED middle managers lack training, education, and experience to effectively direct structural and operational reform.

MED has deconcentrated authority in the areas of staffing, discretionary spending, and materials distribution as a basis to decentralize. However, local political organization does not allow for a democratic decentralization at this time.

Preparatory Activities:

Initiate policy dialogue about the review, codification, and integration of existing legislation such as the Civil Service, Labor, and Education laws and require as a condition precedent to any project the implementation of the *Ley de Carrera Docente*, recently passed by the Assembly and the development of working groups for needed bills, regulations, and codification. These needed legal reforms to enhance administration will take the involvement of the legislative branch of government.

Initiate dialogue to form working groups of prominent public sector administrators, MED leadership, and local management institutes (e.g. INAP, INCAE) to improve structural relationships in MED resulting in a new *reglamento* or *acuerdo*. This form of change is organizational and is internal to the Executive branch: formulated by the Minister, approved by the President.

Initiate a decentralization and staffing study to eliminate regional duplication of function and work towards departmental or municipal level governance for MED.

Options:

Implement a two-phased plan to improve communication, collaboration, operations, and evaluation in MED.

Phase 1 - Design and Implementation of a Management by Objectives Systems (MBO).

Phase 2 - Design and Implementation of Performance Monitoring

Implement in-country management training and staff development and encourage professionalization of the educational administration function.

5. TEACHER TRAINING

Findings:

There are about 18,000 primary school teachers in Nicaragua. About 7,000 are unaccredited.

"Nucleos", regional in-service training programs, accredit about 1,500 in service teachers a year. The 12 Normal schools, secondary schools (grade 7-11) that prepare primary school (grade 1-6) teachers, are also responsible for accrediting teachers. They accredit about 400 new teachers per year. Using the present primary school population and its projected increase off over 200,000, and holding constant the present pupil

teacher ratio (34 to 1), an increase of about 6,100 primary teachers will be needed during the 1990's. This means an additional deficit of at least 3100 in trained teachers, assuming that all graduates enter the teaching profession. More conservative estimates of graduates entering teaching and a teacher-student ration of 45:1 will still leave a deficit of approximately 2000 teachers.

Teachers are trained in traditional, non-student based methodologies. Their program is subject matter based and may include 42 subjects in one year. They receive very little training in instruction and materials.

Preparatory Activities:

A study to determine performance criteria for certification of teachers with on-the-job experience. This study should also examine how merit will be demonstrated, evaluated and compensated.

Options:

Convert Normal Schools into pedagogical centers. These centers would provide pre-service training and would coordinate in-service training and communication opportunities for teachers.

Increase normal school capacity to meet current and future teacher manpower demands.

Use distance learning techniques and create new instructional programs aimed directly at improving classroom teaching.

6. CURRICULUM AND MATERIALS DESIGN

Findings:

The Curriculum Planning Bureau has a number of experienced classroom teachers who have used instructional materials and have some sense of materials design. They are at present working backwards in attempting to adapt the curriculum to the new AID-financed textbooks rather than developing materials for a curriculum. This results from a lack of training in both the systematic development of modern instructional or learning materials and in automated technology.

The new AID-financed textbooks are colorful and grade level appropriate. However, the content is very traditional and is based on information acquisition rather than on inquiry and problem solving.

The texts, especially those of the early grades (1-3) will have to be replaced for the 1992 school year as they are sold to children at these grade levels and are not sturdy

in design. This means that the MED will need to restock some textbooks.

Efforts at curriculum reform are currently being contemplated and UNESCO is in the process of funding a project to support such efforts. The project does not, however, include textbook development.

Nicaragua has the capacity to print new textbooks through a number of different private sector printers, including one in which the MED is presently the major stock holder.

Preparatory Activities:

Two types of preparatory activities are needed. First, if current levels of textbook availability are to be maintained, donor support probably will be needed to restock the current books for at least another year.

Second, training for the curriculum bureau personnel in word processing and desktop publishing techniques should begin at once, if the MED is to develop an instructional materials design and production capability.

Options:

Building the capacity for developing instructional is needed to complement any efforts in curriculum reform. Both equipment for textbook production and training in instructional design techniques will be necessary if instructional materials are to be ready for the 1993 school year. In designing instructional materials, the MED should build on current experience to ensure that materials reflect active learning, wholistic learning, and cognitive strategies development as well as to reflect the Nicaraguan reality with regard to female headed households.

A component of this effort could be to train teachers through in-service workshops in classroom management techniques and manipulation of existing instructional aids as well as in the use of textbooks. This could be done through a series of single concept workshops (e.g. peer learning) which take advantage of the existing in-service training system.

7. ADULT EDUCATION

Findings:

The low school completion rate found in Nicaragua makes focus on adult education imperative if a literate populace is to be formed in the near future. However, during the past ten years, the supply of literacy and non-formal basic adult education has decreased dramatically. This drop in the percentage of the illiterate populations served

is directly attributable to a decrease in the number of individuals willing to serve as teachers on a strictly voluntary basis. The lack of teachers, who are responsible for recruiting students, has had the effect of lowering enrollment in the programs as well.

The Bureau of Adult Education is considering options for adapting or developing a complete integrated series of texts for its formal program, *Educación Básica para Adultos* (EBA) program. Because of political content the language and social science books in this series are considered unacceptable. The materials of another non-formal, literacy based program for rural adults, *Educación Popular Básico al Campo* (EPB), are inexpensive to produce, contain practical information for the rural adult, and are considered pedagogically superior to the literacy and EBA textbooks, but are considered a complementary series. Thus, new textbooks for the formal, post-literacy program need to be developed.

Options:

Donor efforts should be targeted at helping the Adult Education Bureau in its development of a series of new texts that reflect Nicaraguan reality. This would take advantage of the bureau's current experience in its pilot project to develop low cost, practical materials for rural post-literate adults in the EPB program.

Time and cost factors must, however, be weighed but it may be determined that a more cost-effective strategy would be the adaptation of Mexican or other Central American post-literacy adult education series.

I. INTRODUCTION

This chapter discusses the background of the Nicaraguan Primary Education Sub-sector Assessment. It also reviews previous studies dealing with education in Nicaragua, and presents the methodology used in this assessment. An outline of the report is also presented.

A. Purpose

In January of 1991, USAID/Nicaragua contracted with the Academy for Educational Development (AED) to carry out a Primary Education Sub-sector Assessment. This assessment had the overall objective of providing information on the status of basic education, including primary schooling, and both literacy and primary school equivalency for adults. The study focused on areas identified by the Ministry of Education (MED) and AID as priority areas for possible interventions to increase the efficiency of Nicaragua's primary education system. The sub-sector assessment was funded through the mechanism of the Education and Human Resources Technical Support contract.

This document reports the findings in nine key areas: the current status of educational access and efficiency; the legal framework for educational development; the costs and financing of primary education; the MED administrative structure; curriculum and instruction; teacher training; adult education; and school-community relationships. Special issues such as non project assistance, women in development (WID), and the activities of other international donors are also dealt with. The study was carried out in February and March of 1991 by a team consisting of personnel from AED and its subcontractors, Juárez and Associates (J&A) and Research Triangle Institute (RTI).

B. Background

In 1990, ravaged by war, inflation, internal mismanagement, squeezed by U.S. economic sanctions and a drying up of international credit, Nicaraguans voted for a change in leadership after 11 years of FSLN rule. The result, which has been called a vote against hunger, has given the UNO coalition control of the presidency, the National Assembly and most of the municipalities. However, the FSLN, with 40% of the vote, has a solid base of support. In the past year, the economic situation has remained precarious. Thus, there is social and political tension as well as economic hardship.

In Nicaragua, public institutions lack the financial and human resources to carry out programs. Education has been hard hit by the political and economic situation of the country. Rapid expansion in the early 1980s created cumbersome and inefficient

bureaucracies. Teacher turnover, in recent years has been high, school books reflected a particular ideological position, school buildings have deteriorated as a result of the war, and teachers salaries have dropped drastically.

USAID has made a commitment to education through investing in textbooks for all levels of the educational system. This program is designed to provide books for all school children at the primary level. The books, however, have been developed from texts in other Latin American nations as a stop-gap measure to insure instructional materials for Nicaraguan school children. Estimates are that the books will last two or three years, at best. It is, therefore, necessary to look for ways to provide truly Nicaraguan instructional materials in a way that will be sustainable in the future.

Similarly, there are investments in administration, curriculum and instruction, teacher training, and adult education that can improve the quality and efficiency of basic education. At present, however, little is known about either the participants in the teaching-learning process or the infrastructure in which schooling in Nicaragua takes place. There is a pressing need for baseline research.

The Ministry of Education, together with AID, has identified priorities for investment in education. As pointed out above, baseline information which will allow decisions to be made among priorities is lacking. Thus, the current sub-sector assessment was designed to produce information that will assist MED and AID in their decision-making process.

C. The Setting

Nicaragua, with 148,000 square km., is slightly larger than New York State. It is, however the most sparsely populated country in Central America with an average population density of 12.2 persons per square km. Nicaragua borders on Honduras to the north and Costa Rica to the south. It has 541 km. of coast on the Caribbean and 352 km. on the Pacific (see Exhibit 1).

As can be seen from Exhibit 2, the principal administrative unit for the educational system is the region. There are six regions and three special zones each with an administrative office that is part of the Ministry of Education.

Exhibit 1: Map of Nicaragua

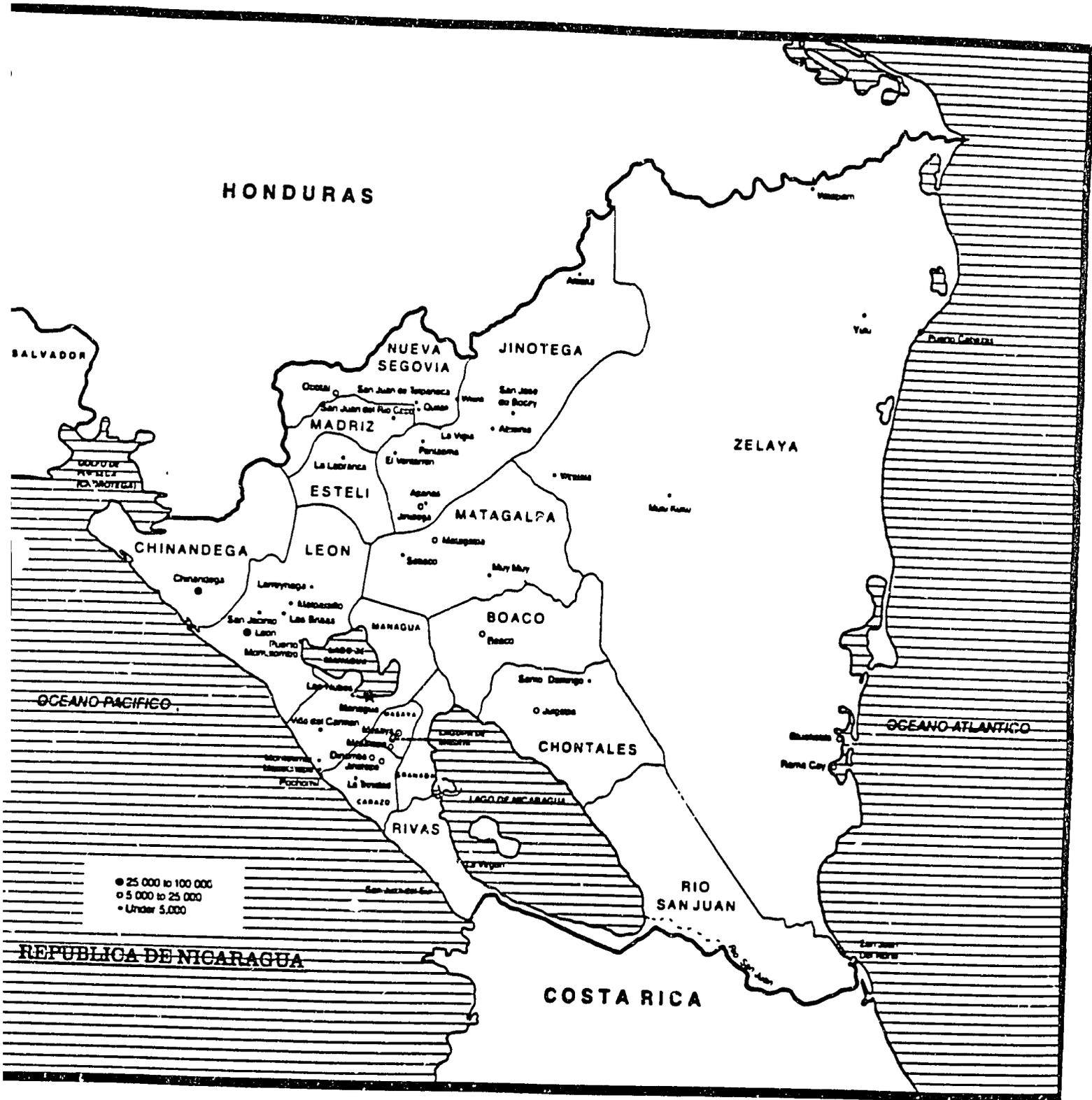


Exhibit 2: Administrative Regions Nicaragua



D. Previous Studies

A number of studies dealing with revolutionary Nicaragua were reviewed by the team. However, analytical studies of the education situation prior to the revolution were largely lacking. A 1975 Education Sector Assessment (AED, 1975) provides some information on pre-FSLN activities in the sector.

This document describes the most pressing problem in primary education as the lack of schooling opportunities for rural children. It suggests that teachers lacked pedagogical training and that children, especially those in rural areas, seldom stayed in school through sixth grade. The study suggests training for teachers in multigrade classroom methods and active learning techniques are essential.

Unfortunately, this document does not treat all areas. For example, little is said about health or nutrition conditions. However, the PL-480, Food for Peace program was cited as successful.

Post-revolution studies have discussed the success of the FSLN at reaching the large adult population of illiterates (Miller, 1982; Arrien, 1989) and at expanding access to primary education in rural areas (Close, 1988; Arrien, 1989; Torres, 1991). Several of the same authors have pointed out that the tremendous effort had side effects such as relatively rapid loss of literacy skills owing to low expectations and lack of infrastructure for continued support for literacy in the former case (Torres, 1991) and an increase in centralization and bureaucratization in the latter (Close, 1988). Formal training of primary education teaching staff in literacy was also lacking as a result of the rapid expansion.

The war also imposed high costs on the primary education system, especially in rural areas. By mid-1985, 800 schools were closed because of the war, with 27 of them completely destroyed. One hundred and seventy teachers had been killed and another 133 kidnapped (Close, 1988). As the war continued to escalate, desertion from the teaching ranks continued to grow. This combined with increasing poverty, created a lack of even the most basic education supplies such as notebooks and pencils.

Thus, although part of the access problem of the mid-1970s was resolved, issues in educational quality and efficiency remain. The Nicaraguan Ministry of Education, with the assistance of USAID, is attempting to prioritize needs and target interventions for maximum impact. This assessment forms one component in this effort.

E. Methodology

1. Scope of Work

The assessment was designed as a focused study of the basic education sub-sector. Its objective was to assess the current status of basic education, adult education, and administrative operations of the Nicaraguan Ministry of Education (MED). Priority

areas included: the quality of educational statistics and overall trends in primary education over the last 10 years; the legal framework and its implications for educational change; external and internal financial resources; current administrative procedures and their relationship to efficient resource utilization; teacher training and experience as related to methods of instruction; utility of existing instructional materials and student evaluation procedures; educational opportunities for out-of-school youths and adults; school-community relationships; and current or projected activities by other international donors in each of these priority areas. After discussion with AID/Nicaragua officials, the special issues such as non-project assistance, private schooling, and WID were also incorporated into the team's workscope.

2. The Assessment Team

An eight-member team carried out the assessment. The team consisted of Ray Chesterfield, an educator with extensive experience in the assessment of primary education programs in Latin America (Chief of Party); Bruce Perlman, a specialist in public administration with ample experience in Central America; Luis Crouch, a statistician and MIS expert with a wide range of international experience; Steve Klees, a well known educational economist specializing in Latin America; Sidney Grant, a recognized expert in primary school curriculum; Donald Lemke, a teacher training specialist with a long history of involvement in Nicaraguan education; Kjell Enge, an anthropologist who specializes in Latin American community organization; and Gary Russell, a member of AID and a specialist in vocational/technical education who examined the adult education component of the assessment.

The team was enhanced by the participation of several Nicaraguan professionals. Dr. William Aguilar prepared the legal analysis. Lic. Roberto Bendaña examined the viability of the businesses owned by the MED. Lic. Jose Zelaya and Lic. Salvador Ampie provided analyses of areas of special interest to the team and Lic. Miriam Anzoátegui provided a feasibility study on radio learning.

3. Methodological Approach

The varied scope of work required a multi-methodological approach. A number of different data sources were tapped for each component of the assessment. These included: review of documents; interviews with key personnel within and outside the Ministry of Education and interviews with teachers, principals, and community members as well as participant observation at the Ministry of Education, where the team had an office, and in schools and communities. In order to assure consistency of the information collected, the strategy of triangulation was employed in which the same topics were investigated through different sources and areas of investigation overlapped so that different team members examined the same phenomena from their particular area of expertise. Following is an in depth discussion of data sources:

Review of Documents, Materials and Forms. A critical review was made of

reports issued by the MED, the National Institute of Statistics (INEC), the Secretariat of Planning and Budget, and the Ministry of Finance, as well as reports produced by international agencies such as UNICEF, UNESCO, OAS, the World Bank and AID. Evaluations were also made of the instructional materials used in primary education, teacher training and adult education. Existing administrative tools such as organizational charts, procedural manuals, job descriptions and performance criteria were inventoried and evaluated. Finally, all of the data collection forms and statistical procedures were reviewed for adequacy, completeness and appropriateness.

Interviews with Key Personnel. Through conversations with AID and MED personnel, a list of key personnel was developed. The principal criterion in choosing key personnel was direct involvement in the implementation of activities in the areas under study. Key informants included: administrative personnel at the executive, staff and bureau levels of the MED; Regional delegates and operational staff at the regional level; municipal delegates and municipal technical staff; AID technical office and program personnel; and representatives of other donor agencies both in Nicaragua and Washington. In-depth interviews dealing with the specific activities with which each individual was involved were carried out. A topical format for interviews was used. The advantages of this type of interview was two-fold. It was both specific enough to allow those being interviewed to expand on critical areas of interest and broad enough so that various interviewees would touch on the same topics thereby providing multiple perspectives of the same phenomena. A total of approximately 140 persons were interviewed. Some of these individuals were visited three or four times in order to clarify or amplify certain points. (See Appendix I-1 for a list of international, central, regional, and municipal level persons interviewed)

School-Community Visits. As shown in Table 1, the team visited a total of 23 primary in the six principal educational regions. The sampling strategy consisted of visiting a minimum of one rural and one urban school and community in region. Regional or municipal delegates were requested to provide a pool of potential schools from which team members selected the schools to be visited after arriving at the local MED office. A total of 27 school directors, 96 teachers, and 147 community members were interviewed. In addition, seven normal schools were visited. Seventeen administrative personnel and 61 normal school teachers were interviewed during these visits. In both primary and normal schools observations of teachers and students were conducted in different classroom activities.

Interview topics were developed for school directors, teachers, and community members. Interviews with directors dealt with general information on the student population, levels of participation of the community, school needs, and satisfaction with the instructional materials. Interviews with teachers focused on nutrition and health problems faced by the children, general achievement of the students, and the teacher's satisfaction with the instructional materials and in-service training. Parents were asked about general economic conditions, family composition, and their ability to pay for school books and student materials as well as their

satisfaction with the teaching staff.

A combination of interview techniques were used with teachers and members of the community. In many cases, face-to-face interviews were conducted with community members in randomly selected homes. However, when possible, groups of parents or teachers were interviewed using a focus group format. With this method, one team member served as a moderator for the group and solicited their opinions about the questions under study. The advantage to this method is that the moderator functions as a facilitator in encouraging participants to talk among themselves and expand on the topics suggested.

Table 1: School-Community Sample

Region	School Community	Urban/Rural	Region/Mun. Pers. Interv'd	Teachers Interviewed	Parents Interviewed
I. Estelí	Estelí	Urban	2		1
	San Pedro	Rural			3
	Isidriillo	Rural			2
II. Leon	Esc. Pureza Ma.	Urban		5	
	Esc. M. Eugenia	Urban	1	2	
	Esc. R. Darío	Urban	1	4	
	Esc. Las Monjas	Rural	1	1	
	Esc. Tirisich	Rural		1	
	Esc. Castillo	Rural		3	18
III. Managua	Esc. Sn. Martin	Urban/Rural	3	15	
	Esc. Torres	Urban	1	2	
	Esc. Sierra M.	Urban		2	
	Esc. Panama	Urban	1	1	
	Esc. Fonseca	Rural		2	
	Esc. Pancasán	Urban	4	2	9
IV. Granada	Rivas	Urban	3	17	
	Río Grande	Rural		7	27
V. Juigalpa	Esc. Lanzas	Urban	3	19	75
	Aguas Caliente	Rural			5
VI. Matagalpa	Esc. Lareynaga	Urban	3	8	
	Ciudad Darío	Urban	3		
	Esc. R. Darío	Urban/Rural		3	5
	Esc. Las Palmas	Rural	1	2	2
Totals			27	96	147

Classroom observations of students and teachers were also made. Teachers were observed delivering classes and interacting with children and other adults. The focus of the observations was the methodology employed by the teachers and their familiarity with the available instructional materials. Focused observations of children used the methodology of time and event sampling. Children were observed in normal classroom instructional activities for a period of time proportional to the amount of time devoted to that activity in the school day. Observations were made in five minute segments and focused on interactions with the teacher, with materials and with classmates. In each classroom, one girl and one boy were chosen at random for observation. Ten children in five different classrooms were observed for a total of two and a half hours.

In addition, observations were made of the various administrative and technical activities that occurred during school-community visits. This included technical meetings, strategies sessions, parent meetings and administrative planning. The general socio-economic make-up of the communities was also observed.

Verification of Findings. For each component of the assessment, findings were verified with key personnel in the MED. Upon completion of a draft report, group meetings were held by the consultant assessing a certain area with those responsible for that area in the MED. Conclusions and recommendations were discussed and the input from the meeting was incorporated into the consultant's report.

4. Assumptions

Several assumptions were made by the team in carrying out the assessment. These assumptions should be made explicit. Accordingly, a discussion of these follows:

First, in analyzing statistical data, the assumption was made that the MED data gathering and processing procedures that had been in use for some time were consistent enough to allow the examination of trends over time. Care should be taken, however, in using the information presented for actual decision making.

Second, it was assumed that the present trend in the MED toward decentralization of resources would remain constant. Thus, the administrative option of greater centralization was not given serious consideration. This assumption was consistent with the future plans espoused by executive management of the MED in meetings with the team.

Finally, in examining the instructional materials and the training procedures, there was a bias on the part of the team members toward child-centered instructional approaches that offer children the opportunity to explore their own reality. This position is based on the team members personal commitment to Latin American education and their familiarity with methods that have been successful in that region.

5. Methodological Limitations

The principal constraint to the assessment was the short time period available to complete the work. Travel restrictions during the Gulf Conflict delayed the start of work two weeks. This led to the condensing of an eight-week scope of work into six weeks. The study could not be extended to make up the lost time because of the onset of the Holy Week holiday. These time constraints led to the selection of a sample made up of relatively accessible schools and communities.

A second major constraint was the timing of the assessment which coincided with the opening of the school year. As classes were just beginning, teachers could not judge the utility of the instructional materials and observations may not have provided a good indication of the teachers ability to work with materials that they have mastered.

Lack of recent population data also conditioned the methodology employed. Extrapolations had to be made that are extremely hypothetical and should be used for illustrative purposes only. Similarly, the lack of current research meant that primary source material had to be gathered and verified through consensus, rather than through replication of previous research.

There was a lack of either manual or automated filing and retrieval systems, especially for the last five years, throughout the Ministry. This limitation prevented the team from analyzing aggregate trend data in key areas such as budgeting and accounting.

Civil unrest related to the existing economic situation, which included a currency devaluation, also impinged on the assessment methodology. Due to these factors, planned visits to the Atlantic Coast could not be completed owing to a strike of the national air carrier for that region, during the time scheduled. Thus, the assessment is limited to the six principal regions of Nicaragua.

F. Organization of the Report

The major topic sections following this introduction detail the findings that result from these procedures described above in each of the eight principal areas of study, discuss special issues in education interventions, and present conclusions and recommendations for the design of components of future primary education projects and possible bridging activities which are derived from the findings. Following is a topic outline of the remainder of the report:

Chapter II presents the findings of the team on the current status of educational access, efficiency and quality in Nicaragua.

Chapter III discusses the legal base for education and the current legal climate for educational change.

Chapter IV deals with the trends and constraints to the financing of Nicaraguan primary education.

Chapter V analyzes the MED administrative structure and makes recommendations for improving management capacity.

Chapter VI continues with an analysis of the MED implementation structure. It, however, focuses on the existing management information system of the Ministry. This department of the MED is treated as a special case because of its importance in tracking indicators of school performance.

Chapter VII presents the findings of the team on the appropriateness and effectiveness of instructional practices, texts, and other learning materials.

Chapter VIII examines the effectiveness of the major teacher training programs in Nicaragua.

Chapter IX discusses adult education programs.

Chapter X focuses on the relationship of the Nicaraguan primary school to local communities and socio-cultural factors that might impede learning.

Chapter XI presents findings on special issues and discusses work of other international donors in the education sector.

Chapter XII presents the team's major conclusions and offers recommendations for possible areas of AID involvement in helping to improve the efficiency of primary education.

II. CURRENT STATUS AND TRENDS IN NICARAGUAN PRIMARY EDUCATION

This chapter provides a general overview of the status of primary education in Nicaragua. Based on available data, Nicaragua compares favorably with other Central American countries in terms of access, with gross enrollment rates of over 90%. There has been a recent influx of school children, however, owing to the return of expatriate Nicaraguans. In addition, the primary school age population will grow by over 200,000 during the decade. This will require 6000 new classrooms in a system with at least 30% of the existing 10,041 classrooms in serious need of repair. Between 2000 and 3500 more trained teachers than the system is currently able to produce will also be needed to meet the demand.

The Nicaragua primary education system currently has the lowest internal efficiency in Central America. Approximately 22% of those entering first grade complete sixth grade education and 16 student/years of effort are needed to produce one sixth grade graduate. Averages for Central America are about 55% and 10 student/years of effort. This inefficiency is primarily a result of student repetition which is estimated at between 40%-50% of the student population.

The costs of inefficiency are extremely high as Nicaragua is not producing a literate and numerate population capable of making informed choices and having skills to support development. Investment in school renovation, furniture, and perhaps construction will be necessary to meet current needs and the increasing demand. Efficiency must be improved by raising the quality of instruction and providing appropriate materials that support learning through active inquiry.

A. School-age Population and Enrollment

1. Population

In examining Nicaraguan population data, the team made two important findings regarding the utility of existing information. First, the last population census in Nicaragua was carried out in 1971. The only existing detailed demographic projections, made in 1983 under the auspices of the *Instituto Nacional de Estadísticas y Censos* (INEC) and the *Centro Latinoamericano de Demografía* (CELADE), are based largely on 1971 census data and the 1976-78 demographic survey. More recent social or demographic surveys (1985, 1989) have been carried out but have not been used to update the projection. INEC has plans to update the 1983 projection using the more recent surveys, with assistance from CELADE, by the end of 1991.

Second, sub-national projections are notoriously difficult technically and less reliable than national projections. The farther out from the base year one goes, the larger the gap in reliability between national and sub-national projections.

As a result of the twenty-year gap between 1991 and the base year for the current projections, indicators using population in either the numerator or the denominator, such as the Gross Enrollment Ratio (enrollment in primary school divided by population of school age children), are likely to be crude estimates at best. Sub-national indicators will generally be even further off the mark than national ones. Furthermore, the size of the error for sub-national projections is likely to be larger for projections into the 90s, since these are more than twenty years removed from the base. It is unlikely that there will be a new census until 1993 or 1994. According to the director of INEC, that organization is currently seeking funding from UNFPA for a population census and from USAID for an agriculture census. Owing to the time needed for processing and tabulation, results will not be known until about 1995.

Table 2 summarizes the INEC-CELADE data. As can be seen, school-age population has grown at an annual rate of 3.1% during the 1980s. Estimates are that growth will decline in the 1990s to a rate of 2.8%. The urban rate of growth greatly surpasses the rural rate. In the 1980s, for the key 7-12 age group, urban growth was projected to be 4.3%, and rural growth only 1.6%. Nicaragua will have become a predominantly urban country by 1990, with urban school-age population making up about 60% of total school-age population.

Table 2: School Population Growth Rates

Age Group	Population			Growth Rates	
	1980	1990	2000	1980-90	1990-2000
4-6					
urban	141,553	216,933	295,928	4.4%	3.2%
rural	136,591	160,046	172,751	1.6%	0.8%
total	278,144	376,979	468,679	3.1%	2.2%
7-12					
urban	251,337	384,202	554,211	4.3%	3.7%
rural	225,711	264,075	300,989	1.6%	1.3%
total	477,048	648,277	855,200	3.1%	2.8%

2. Enrollment

Current (1990) enrollment and gross enrollment ratios (GERs), calculated as the ratio between total primary enrollment (grades 1-6) and school-age population, are an indication of an education system's success at providing access to primary schools. Table 3 summarizes these ratios.

Table 3: 1990 Enrollments and Gross Enrollment Ratios

	Enrollments	GER
Pre-school	61,292	17%
Primary	632,882	98%
Urban	364,926	95%
Rural'	267,956	102%
Male	309,045	94%
Female	322,937	101%
Urban Male	177,705	92%
Urban Female	187,221	98%
Rural Male	132,240	98%
Rural Female	135,716	105%

Clearly, there is urban-rural and male-female parity in gross enrollment terms. Rural and female enrollment ratios are somewhat higher than urban and male ratios, a situation perhaps related to the recent war (and draft), to the rural development efforts of the previous government, and to a greater need for boys labor or higher opportunity cost for boys to stay in school. As will be shown subsequently, however, there are significant urban-rural disparities in net flow or survival rates from grade to grade, with rural survival rates being much lower than those of urban children.

The Nicaraguan GERs of above 90% compare favorably with the rest of Central America. Throughout the region such rates average about 90%. But the dynamics of enrollment over the last decade are far more interesting than the current levels of key indicators, since these dynamics indicate possible on-going trends. The growth of enrollment over the decade of the 1980s can be characterized by:

Remarkable increase in the pre-primary system. The GER of the relevant population age-group (4-6) has increased from just 3% in the late 1970s to about 20% by the middle of the 1980s. It has declined somewhat in recent years. (See Appendix II-1.)

Very fast increase in the overall primary system in the early 1980s. The primary GER (using population of ages 7-12 as base) was brought from 82% in 1978 to 100% in just three years (see Appendix II-1). This was achieved via a growth in enrollment of more than 10% per year, sustained over several years. Over the whole decade, enrollment growth averaged about 5% per year.

Impressive enrollment growth in the rural areas. An 18% growth per year was sustained over 1978-1983, and 6.1% over the decade as a whole (see Appendix II-1).

Uneven growth over time. Some years registered growth rates of 15% in the total system, others registered as low as -1%. This unevenness is reflected in the fact that the point-to-point growth rate from 1978 to 1990 was 5.0% per year, whereas the true year-by-year average over the 11 years was only 4.1%. Much of this unevenness can undoubtedly be attributed to the war. Figure 4 at the end of this chapter uses war deaths as an indicator of the intensity of conflict. As can be seen, enrollment generally declines (or does not increase as fast) in years when deaths were high. In addition to the war, it seems unlikely that a bureaucracy such as the MED had the infrastructure in the late 1970s to sustain rates of growth of 15% in its services for an extended period. This is especially true as the GER neared and exceeded 100%.

Rural enrollment rose rapidly in the short-run. Rural enrollments a percentage of total enrollment rose from 35% to 43% in just two years, but never rose beyond this. Given trends in population migration, these percentages might be seen as more than reasonable as a policy goal. However, as will be shown subsequently, the low internal efficiency of the rural school system makes these gross rates quite misleading.

Private education accounts for a small percentage of total enrollment. Only 13% of primary enrollment, made up by about 7% in the subsidized private sector and 6% in the non-subsidized private sector (see Appendix II-1). This has changed little since the late 1970s. Enrollment in the subsidized private sector grew at only 2.6% per year, or about half of the growth of the overall system. This subsidized sector is one of the sectors that might provide a low-cost alternative to the traditional private sector and a high-quality management alternative to the public sector. Its low growth rate, however, would seem to rule out this possibility.

The non-subsidized private sector grew at 5.7%. This was a little faster than the overall system (see Appendix II-1). Though fast, growth of the non-subsidized private sector has been very uneven, so it is difficult to ascertain whether its fast growth is a significant trend. It is also impossible to tell with existing data how much of this growth has been in the high-quality, elite traditional system, as opposed to the non-subsidized small neighborhood schools.

B. System Internal Efficiency

For the purposes of this analysis, efficiency was measured through such indicators as repetition, dropout, net survival, and the percentage of students reaching sixth grade.

The internal efficiency of Nicaragua primary education has held steady in the face of remarkable growth in enrollment (see Appendix II-1). As the education system reached out to those in rural areas, those with illiterate parents, and, in general, those most likely to fail, one would have expected the repetition and dropout rates to have increased, and survival rates to have fallen. It is encouraging that these held constant.

On the other hand, internal efficiency was already extremely low in the 1970s, and it has remained equally low. Consequently, Nicaragua currently has by far the lowest internal efficiency in Central America. The key parameters are:

Total graduates/1000 entrants 6 years before	223
On-time graduates/All graduates	44
Student/years of system effort per graduate	16

Averages for Central America are about 550 graduates/1000 entrants, and about 10 student/years of effort to produce one 6th grade graduate. Nicaragua's education system is therefore two-thirds to one-half as efficient as the Central American norm. To put it in other terms, barely 20% of the children entering the 1st grade made it to the 6th grade in 1978, and this percentage remains the same today. The survival rate between 1st and 2nd grades was about 55% in 1978, and it is still about 55%.

1. System Efficiency and Pre-primary Education

Pre-primary education seems to have had little or no impact on system efficiency. Enrollment in the pre-primary system rose from 3% to 20% of the relevant cohort during the 1980s. Yet, during this period the first to second grade survival ratio has not changed. It could be argued that other confounding changes may have intervened. However, in a multivariate analysis which controlled for other factors, such as the pupil/teacher ratio and the percentage of trained teachers, no significant impact of the pre-school program in determining the 1st to 2nd grade survival rate was found. It may also be that a threshold level of pre-school GER higher than 20% needs to be reached before effects are felt, or that the program needs time to mature.

Despite its lack of effect on school survival, pre-primary education may have important social functions other than preparing children for primary school. In particular, during the war, pre-primary education may have played a role in permitting larger proportions of women to join the labor force. In this sense, pre-primary education may have to be thought of largely as day-care. Therefore, its effectiveness may have to be evaluated on its merit as serving a day-care function. With the war now over, this calculus is particularly important, and dependent on uncertain projections about female labor force behavior.

Given the currently available evidence, it would seem unjustified to recommend an increased share of spending for pre-primary education. There is, however, significant international evidence about the value of pre-primary training as an educational strategy. Thus, before making any sweeping recommendations about reducing (either in absolute terms or in terms of budgetary shares) pre-primary education¹, further study of the Nicaraguan case is needed to answer questions such as: has the program really not led to

¹Although note that in fact enrollment in the pre-primary program has decreased by some 15,000 in the last few years.

improved educational survival, and if not, why not?

2. System Efficiency and Private Schooling

Recent World Bank reports find that efficiency in the private education sector of several countries measured in various ways, is higher than in the public sector. That the private sector could be more effective in delivering a high-quality education to a socio-economic elite at a high price would not be surprising, but could hardly be termed "efficient." Some of the more recent studies, however, find that "barrio" schools also deliver more "education" (as measured by standardized tests, and controlling for many other factors) per unit cost than the public sector. The question naturally arises: could this be the case in Nicaragua?

There can be little question that the private sector has higher internal efficiency: the survival rate from 1st to 2nd grade has been, throughout the 80s, about 74-77% in the private sector, as opposed to 53-54% in the public sector. Survival to the 6th grade shows a similar 20- to 25-point gap between public and private sectors. But the question remains whether this "efficiency" is being produced by factors associated with, though not intrinsic, to "privateness." Furthermore, at what cost, in terms of resources, is this internal efficiency being purchased? It is impossible to answer this kind of question unequivocally given the available data, but some suggestive answers can be given.

First, much of the greater apparent efficiency of the private sector is due to the fact that students from urban backgrounds tend to survive at higher rates, and the private sector is overwhelmingly urban. In 1989, 90% of private enrollment was urban, whereas only 54% of public sector enrollment was urban. The following table shows survival rates broken down by type of administrative control and urban-rural origin of the students.

Table 4: Survival Rates — 1988 and 1989
(in percent)

Grades	Urban		Rural		Total	
	1-2	1-6	1-2	1-6	1-2	1-6
Public	67	37	43	7	53	18
Private	81	64	53	18	77	57
Total	70	41	43	7	55	21

This table illustrates that when urban vs. rural origin of the students is controlled, about 10 percentage points of the gap in efficiency between the public and private sectors is explained.

Second, there is the cost issue: what levels of resources per student does the private sector use to produce the higher survival rates? To answer these questions, even

in a preliminary form, more than a bivariate framework is required. Using the regression accounting framework where all other available confounding and cost factors (availability of pre-primary training, pupil/teacher ratio, percent of teachers who are certified, etc.) are included, it was found that private education does not seem to confer an efficiency advantage when controlling for cost.

3. Urban/Rural Differences in Internal Efficiency

The private-public/urban-rural table presented above also makes it clear that a major source of difference in efficiency is the "urban factor." It is clear that the "demand" side (i.e., parents' pressure on children to stay in school and do well, and opportunity costs) plays a role in educational persistence. There is a 30 percentage point difference in survival rates between urban and rural areas. This difference cannot be explained away by education system factors (such as teacher supply, private and public control) alone. When one controls for those factors, urban and rural differences are still extremely important.

4. Gender Differences in Internal Efficiency

Not only are GERs for females about 10 percentage points higher than for males, as shown previously, but internal efficiency parameters are also better for the girls than for the boys (see Appendix II-1). The following summary data for the most recent three years available illustrate this point.

Table 5: Internal Efficiency — Boys versus Girls

Years	Percent Flow from Grade 1-2		Percent Flow from Grade 1-6	
	Boys	Girls	Boys	Girls
1986-87	54	59	26	35
1987-88	53	57	18	25
1989-90	59	62	28	32

Given the higher gross enrollment for girls, the fact that they also have better survival rates suggests that equal opportunity for girls is not a problem in Nicaragua. Rather, it seems that analysis is needed to determine why boys' performance is lower than girls' performance on both gross enrollment and efficiency counts. This may suggest ways to improve the performance of both.

5. Dropouts, Repeaters, Overage Students, and the Sources of Inefficiency

Large numbers of overage children are present in the Nicaraguan education system. There are almost twice as many children in 1st grade as there are in the population of seven year old children! In 1984 and 1989, for example, the age structure of first grade enrollment was as follows:

Table 6: Overage Enrollments in 1984 and 1989

Age	Enrollment		Enrollment Percent	
	1984	1989	1984	1989
7	85,253	107,438	49	50
8	32,997	47,001	19	22
9	20,506	26,504	12	12
10	14,665	17,961	8	8
11	8,778	8,272	5	4
12	6,408	5,580	4	3
13	4,987	3,175	3	1

More than 25% of the space in first grade is taken up by children who are two or more years older than the norm. This has correctly been seen by the MED as a source of inefficiency, and there is discussion of moving these children to other sub-systems of the education system. However, this pre-supposes that these overage children are new entrants into the school system. It may be, however, that these overage children are largely repeaters. If the repetition rate is high enough to produce such large numbers of overage children, then this means that the rate of intake of seven year old children into first grade must be considerably lower than is commonly thought. It also suggests that dropping out is partly caused by excessive repetition.

The officially reported repetition rate oscillates around 27% for the first grade. The numbers above, when coupled with population numbers, cast doubt on the possibility that the repetition rate can be so low. A hypothesis of a repetition rate between 40% and 50% seems more consistent with the numbers of overage children and with other data offered by the Ministry of Education. The argument goes as follows. The following table shows population, unenrolled population, total enrollment by age, and first grade enrollment by age.

Table 7: Enrolled and Unenrolled Populations in 1984

Age	Total	Unenrolled	Enrolled	First Grade
7	96,716	11,463	85,253	85,253
8	93,547	5,655	87,892	32,997
9	90,653	20,887	69,766	20,506
10	87,960	21,525	66,435	14,665
11	85,363	25,922	59,441	8,778
12	82,739	27,428	55,311	6,408
13	80,011	-7,822	87,833	4,987
Total	616,989	112,880	511,931	173,594

Sources:

Population—INEC-CELADE.

Enrollment—Estadísticas Educativas Sexenio 1978-1984, p. 42.

Note:

The total unenrolled population does not include the negative number in age 13, which is an artifice of the fact that the enrollment numbers refer to 13 and older.

Enrollment in first grade in 1983 (the previous year) was 202,000. If the repetition rate is about 28%, this means that about 60,000 of the enrollment in 1984 were repeaters. Since about 85,253 (see table above) were new (7 yrs. old) enrollees, then about 30,000 (approximately equal to 173,594-85,253-60,000) spaces were available for new first graders over the age of 7. There were only 112,880 (see table above) unenrolled children between the ages of 8 and 13. To be conservative, and to include children older than 13, assume there were 150,000 unenrolled children who represented an unmet demand. If there were 30,000 spaces available per year for new overage children, then the unmet demand in 1984 could have been met in five more years, say by 1989. Yet, as shown in the previous table, the numbers of overage children in first grade in 1989 had actually increased substantially. This can only be explained by assuming a first grade repetition rate closer to 50%.

Another way to look at the problem using totally different data is as follows. The following are MED data from the 1990 Plan Evaluation:

Table 8: Total 1990 Primary School Enrollment

Initial Enrollment	709,380
Final Enrollment	662,871
Number Passed	412,253
Percent Passes	58.1

If the assumption is made that another 10% drop out between years, then only 58%-10%=48% continue to the next grade, on average. Since this applies to all of primary schooling, it must apply at least equally to the first grade.

6. Teachers, Teacher Characteristics and Internal Efficiency

The last decade has witnessed two parallel and related phenomena in Nicaragua's education system: a simultaneous decline in pupil/teacher ratios, particularly in the rural areas, and in the percentage of teachers who are "graduado" (certified) (see Appendix II-1). The following table illustrates these points.

Table 9: Pupil Teacher Ratio and Teacher Certification

Year	Pupil Teacher Ratio			Percent Certified Teachers		
	Urban	Rural	Total	Urban	Rural	Total
1978	33	48	37	78	56	73
1984	33	32	32	65	35	53
1990	37	32	34	77	45	62

As can be seen, by 1984, pupil/teacher ratios had been equalized for the urban and rural sectors. By 1990, pupil/teacher ratios were actually higher in the cities. The percentage of untrained teachers reached a low point in the middle to late 1980s, and then recovered its former levels in the urban areas, but has stayed lower in the rural areas.

Multivariate analysis shows a relationship between the pupil/teacher ratio and the percentage of students surviving from 1st to 2nd grade. A 10 pupil drop in the

pupil/teacher ratio implies a 7 percentage point increase in this survival rate. Recent World Bank research has found that the teacher/pupil ratio is not an important factor in explaining educational quality or performance, until this ratio drops below about 15 students to a teacher. It may be that the top of this range is different in the Nicaraguan case, given the low level of training, or that Nicaragua is already within the international threshold. In either case, some support was found for the notion that lowering the pupil/teacher ratio enhances the probability of educational survival from 1st to 2nd grade.

Teacher certification, as measured by the percentage of teachers who are "graduados," did not significantly influence the survival rate. Thus, the problem of untrained teachers cited by MED officials may not be as serious as thought, at least in terms of internal efficiency. Other variables, such as the general lack of infrastructure discussed later may serve to mitigate the effect of normal school education.

7. Summary and Conclusions on Efficiency

In summary, there are serious internal efficiency problems in Nicaragua. The most serious aspect appears to be the problem of repetition, particularly in the first grade. Many children drop out in the middle of the year, and occupy places in school again next year. Many children fail and must repeat because of failure. It may be that it is this failure-dropout syndrome that eventually leads to permanent dropping out. In either case, it is this syndrome that results in a survival rate from 1st to 6th grade of only about 21%-22%. This means that, if the situation continues, Nicaragua would never have a labor force more than 22% of which has completed primary education. Evidence from the more recent economic success stories of the Pacific Rim suggests that modern development cannot take place until at least 40% of the labor force has a completed primary education. A much more efficient education system is a key pre-condition for self-sustaining economic growth. Moreover, if this growth is to be broad-based and relatively free of conflict, the gain in efficiency in the education system must not be won at the cost of sacrificing the equity and breadth that have been achieved.

C. Facilities and Equipment

Data on classrooms and equipment are relatively difficult to obtain. Nevertheless, existing data show clear trends in relation to classroom construction, school repair, and student learning materials.

1. Classrooms

Data on numbers of schools are not considered very meaningful by Nicaraguan officials, because some schools may have 40 classrooms, others only two. Also there are definition problems about what constitutes a school, and the definitions have changed repeatedly over the last ten years. For example, during some periods, school buildings could house more than one school, if there was more than one shift and there was a

different principal in each shift. (If the two shifts had the same principal, then there was only one school.) Thus, schools can appear and disappear from the statistics. For this reason, Nicaraguan statistics concentrate almost exclusively on physical classrooms.

The last ten years saw a significant increase in classroom construction (see Appendix II-1), particularly toward the early part of the decade.

Over the decade, the construction program increased the stock of classrooms by 84%. Naturally, some classrooms were damaged during the war and by natural causes. The war also made maintenance programs difficult to carry out. Thus, the resulting numbers for the decade of the 1980s must be considered only indicative. The following table presents high and low estimates of the stock of classrooms at various points in time, taking into account deterioration, and shows resulting students/classroom figures.

Table 10: Number of Classrooms and Students/Classroom

Years	Number of Classrooms		Students per Classroom	
	Low	High	Low	High
1978	6,998	6,998	45	45
1984	9,761	12,664	37	47
1989	10,041	12,321	42	51

In terms of students/classroom, the situation is at best about what it was at the end of the 1970s, at worse about 13% more crowded. In general terms, the construction program kept pace with the increase in enrollment.

The need for classroom repair and maintenance is great. The following are estimates of classroom conditions and repair priorities (see Appendix II-1).

Table 11: Classroom Repair Needs – 1991

Regions	Priority Level		
	I	II	III
I. Estelí	101	67	16
II. León	84	47	77
III. Managua	176	166	85
IV. Granada	91	53	63
V. Juigalpa	54	48	40
VI. Matagalpa	116	28	9
RAAN	NA	NA	NA
RAAS	NA	NA	NA
ZE-3	NA	NA	NA
Total	622	409	290
Percent	47%	31%	22%

Priority I are classrooms that are practically unusable or dangerous. These require virtual re-construction. Priority II are classrooms requiring repair. Priority III are classrooms requiring only maintenance, albeit more than routine maintenance.

These data refer only to classrooms already prioritized by the MED. The universe of classrooms has also been classified as to condition. While the criteria for classification are not clear, the figures suggest that at least a third of the MED classrooms require some repairs. This classification was conducted in 1989, and it is likely that there has been further deterioration since then.

2. Learning Materials

Data on learning materials are particularly difficult to find and interpret. Piecing together data from yearly Plan Evaluations, we have developed a sample of three recent years, as detailed in the following table.

Table 12: Learning Materials per Student

	1986	1987	1990
Notebooks	11.7	2.4	5.1
Pencils	10.1	13.5	4.8
Textbooks	4.1	6.9	4.7

D. Conclusions and Recommendations

1. Conclusions

As an addition to the scope of work of the statistician/MIS specialist, AID asked that comments be made on the validity of the existing statistical data. No evidence of manipulation of data at the Managua level was found. Proofs to verify the validity of the data were not, however, carried out. This conclusion is based on the fact that certain artifacts, such as a set of numbers all upped by the same ratio, which would not appear in tabulated absolute numbers, but which would be seen when a number of percentages and ratios are developed as was done for the assessment were not found. In addition, the relative quantitative naivete of Nicaraguan technicians would rule against doctored data.

Statistical data on the Nicaraguan population as a whole is out of date and therefore unreliable for making projections. Similarly, data on the school age population must be interpreted with care. Using existing data, however, several consistent trends are clear:

a. Access

Nicaragua has made progress in increasing access to both pre-school and primary education. Preschool education has increased four-fold and primary school gross enrollment ratios of above 90% compare favorably with those of other Central American Countries.

Most Nicaraguan primary school children are in public schools. Private education accounts for only 13% of total enrollment.

There is no access bias against females as gross enrollment rates for girls are higher than those for boys in both urban and rural areas.

b. Efficiency

Nicaraguan primary schools are highly inefficient as only about 20% of the children entering the first grade complete the sixth grade and the average number of student school years to produce a sixth grade graduate is 16. The problem is largely one

of repletion and dropout which appear to be much higher than official estimates.

Pre-school education is not an explanatory factor in school success. Children who have participated in pre-school education do not have greater school survival rates than their classmates. The program may, however, serve child care function for working mothers.

Urban children have significantly higher survival rates than their rural counterparts. Explanatory factors for the rates are, however, not clear as differences are not attributable to such variables teacher certification, teacher/pupil ratio, or private versus public school attendance.

Private school education is no more efficient than public education when variables such as cost, student/teacher ratio and teacher certification are controlled. The urban location of most private schools has, however, influenced higher survival rates.

Girls have a higher school survival rate than boys regardless of place of residence. The reasons for this difference in success is not, however, clear.

c. Quality

The problem of unqualified teachers seems to be less severe than generally recognized by administrators within the Ministry of Education. No relationship was found between teacher certification and student survival in school.

The lack of influence of teacher preparation on school success may be related to other factors. The relatively high percentage of schools in need of repair, combined with decreasing amounts of student materials, may create an environment in which even trained teachers cannot function effectively.

2. Recommendations

Recommendations in this section focus on data needs or applied studies that should be conducted to provide baseline information for monitoring investments in primary education and to more precisely target project interventions.

Systematic studies of repletion and dropout are needed to determine the actual extent of this phenomenon and its effect on denying access primary school initial entrants. Both cross-sectional studies using age-grade cohorts and studies focusing on labor force requirements should be conducted.

Given the currently available evidence, it is unjustified to recommend an increased share of spending for pre-primary education. There is, however, significant international evidence about the value of pre-school as increasing educational efficiency. In addition, the poor quality of the data and the possibility that in Nicaragua, pre-primary schooling

may perform a useful day-care function, make an in-depth study of the Nicaraguan pre-primary education program needed. This study should determine both its contribution to school survival and its effect on female labor force behavior.

Extensive studies of urban-rural school differences are needed to determine precisely what it is about urban schools that contribute to higher survival levels in urban areas. Studies should focus on those factors that are replicable in rural areas.

Inventories of school conditions and student supplies must be made to determine if the minimum infrastructure for instruction exists in Nicaraguan schools.

Figure 1. Gross enrollment ratios
Nicaragua, 1978-1990

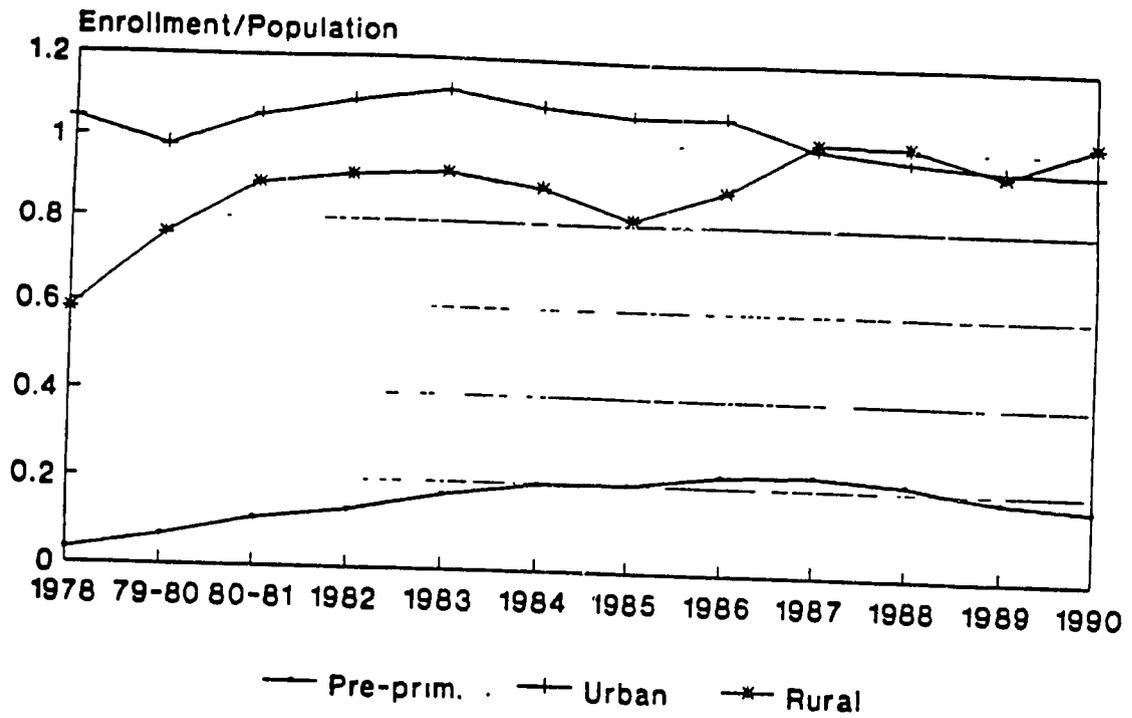


Figure 2. Enrollment
Nicaragua, 1978-1990

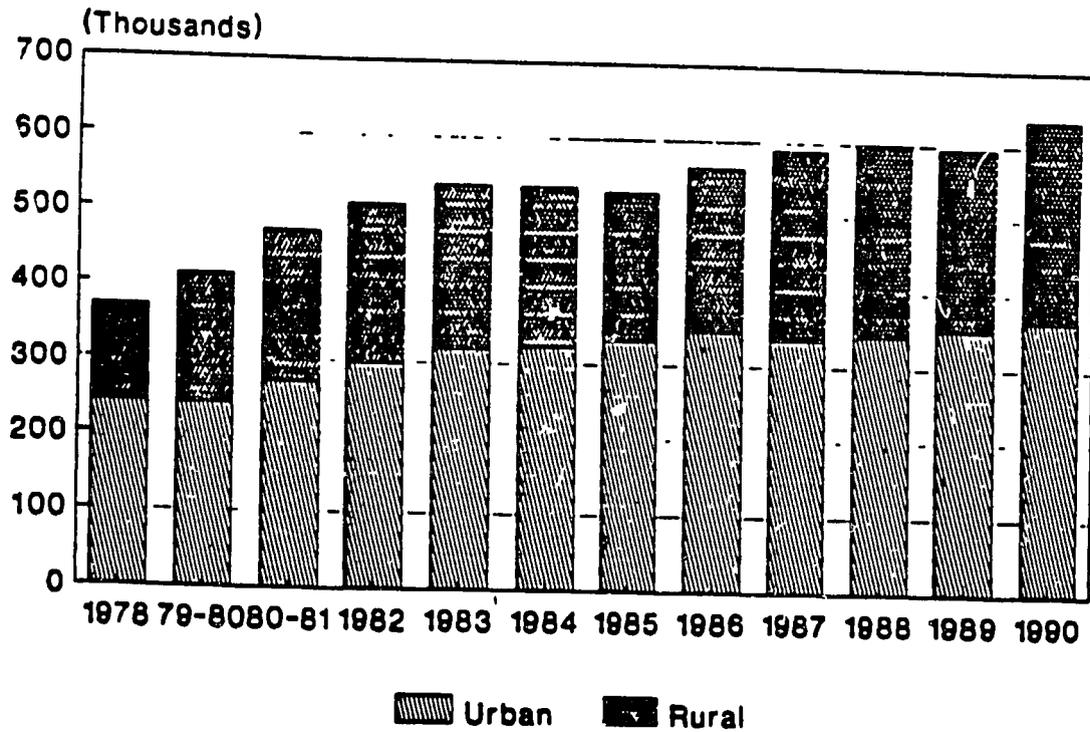


Figure 3. Urban and rural growth rates
Nicaragua, 1978-1990

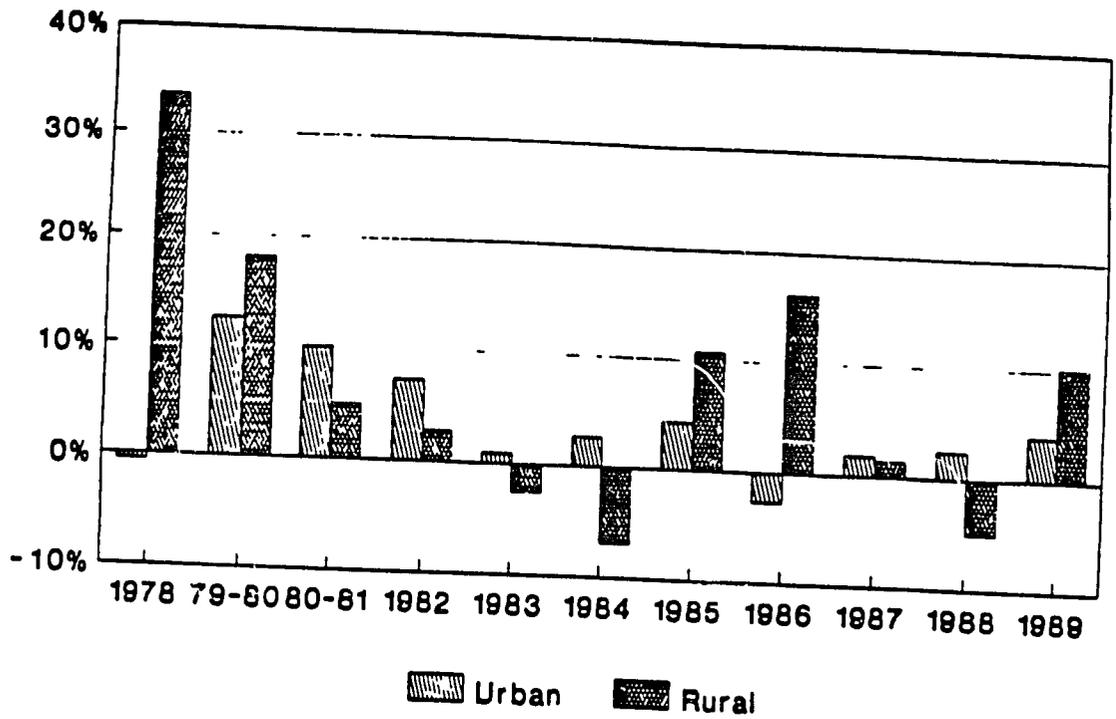
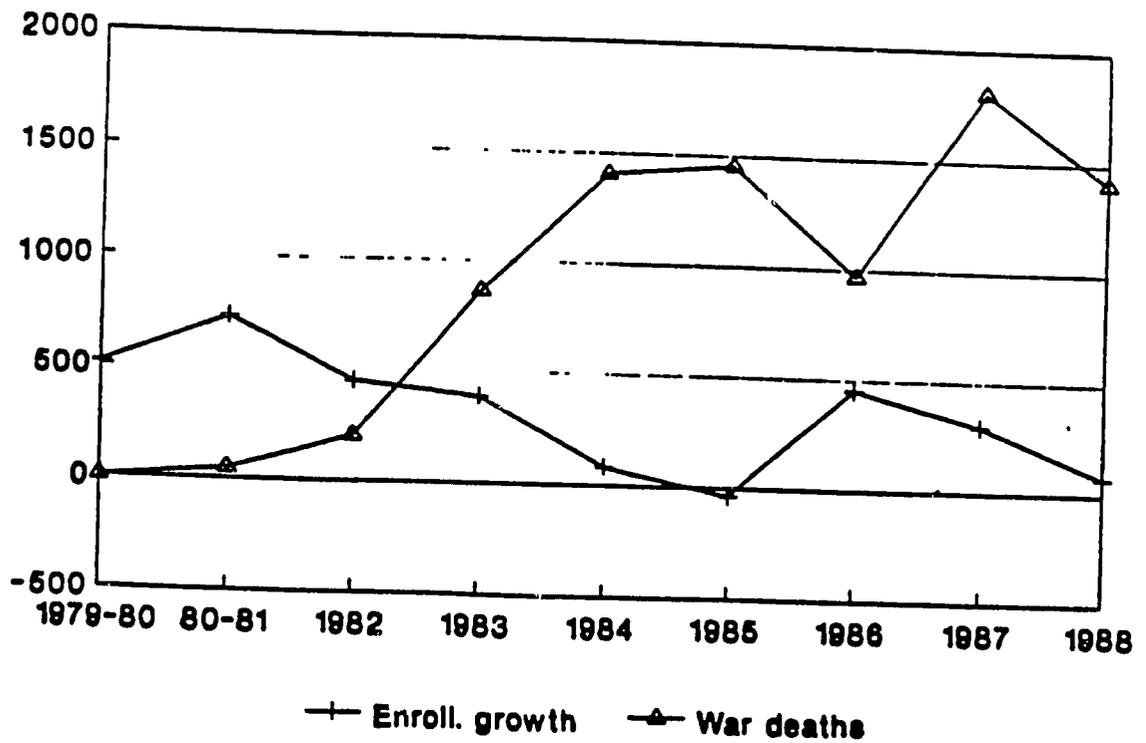


Figure 4. Enrollment and the war
Nicaragua, 1979-1988



Enroll. growth in abs. terms, in 100s .

Figure 5. Private sector enrollment
Nicaragua, 1978-1990

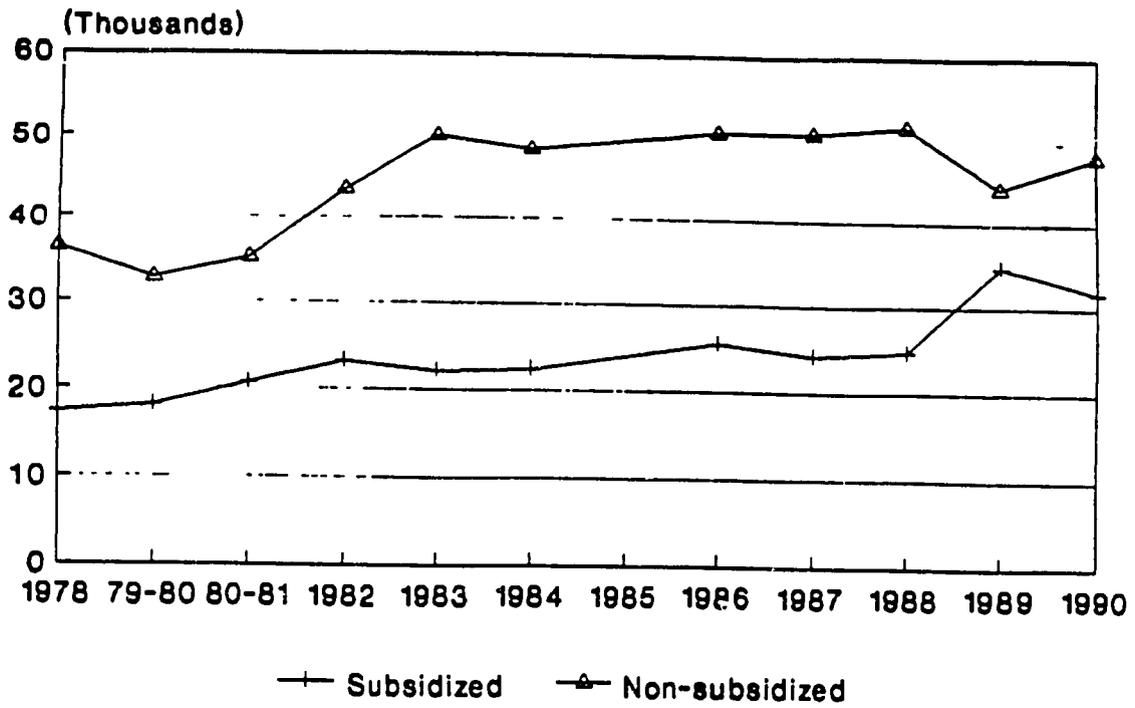


Figure 6. Nicaraguan enrollment pyramid

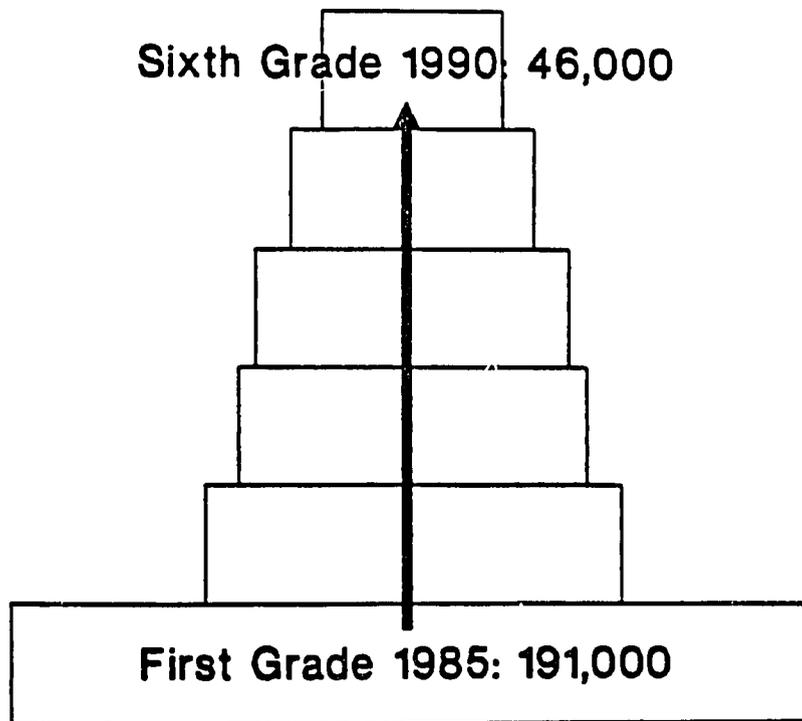


Figure 7. Survival or net flow rates
Nicaragua, 1978-1990

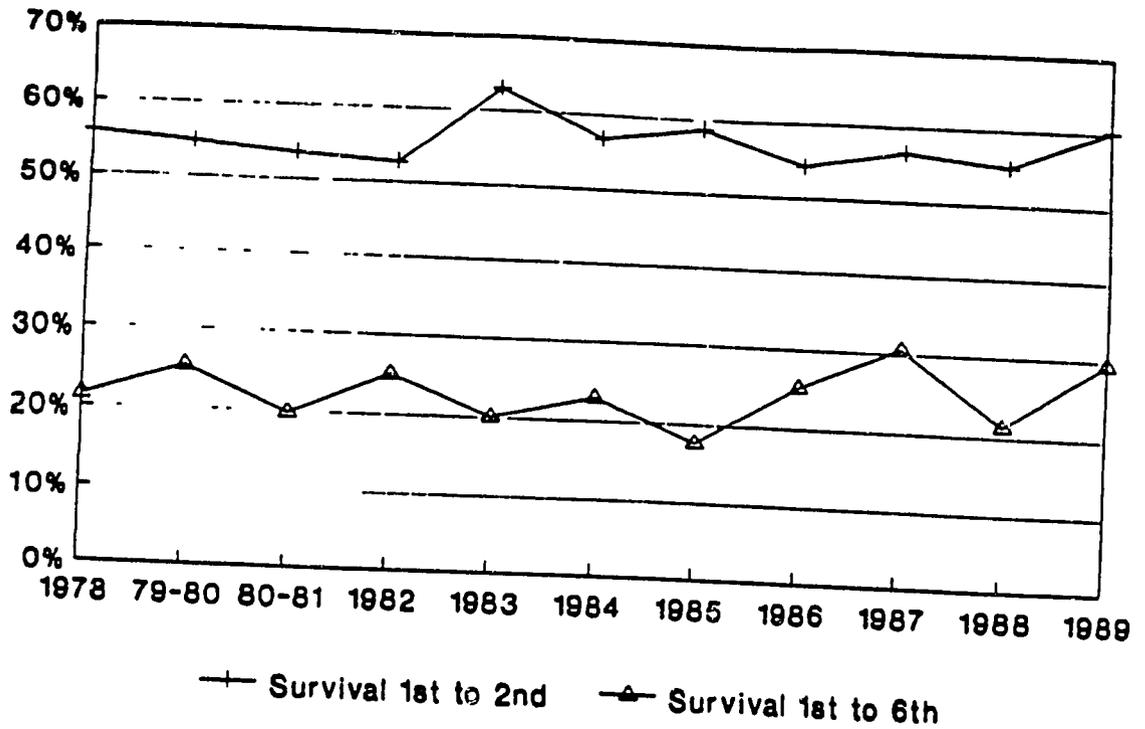


Figure 8. Percent of teachers certified
Nicaragua, 1978-1990

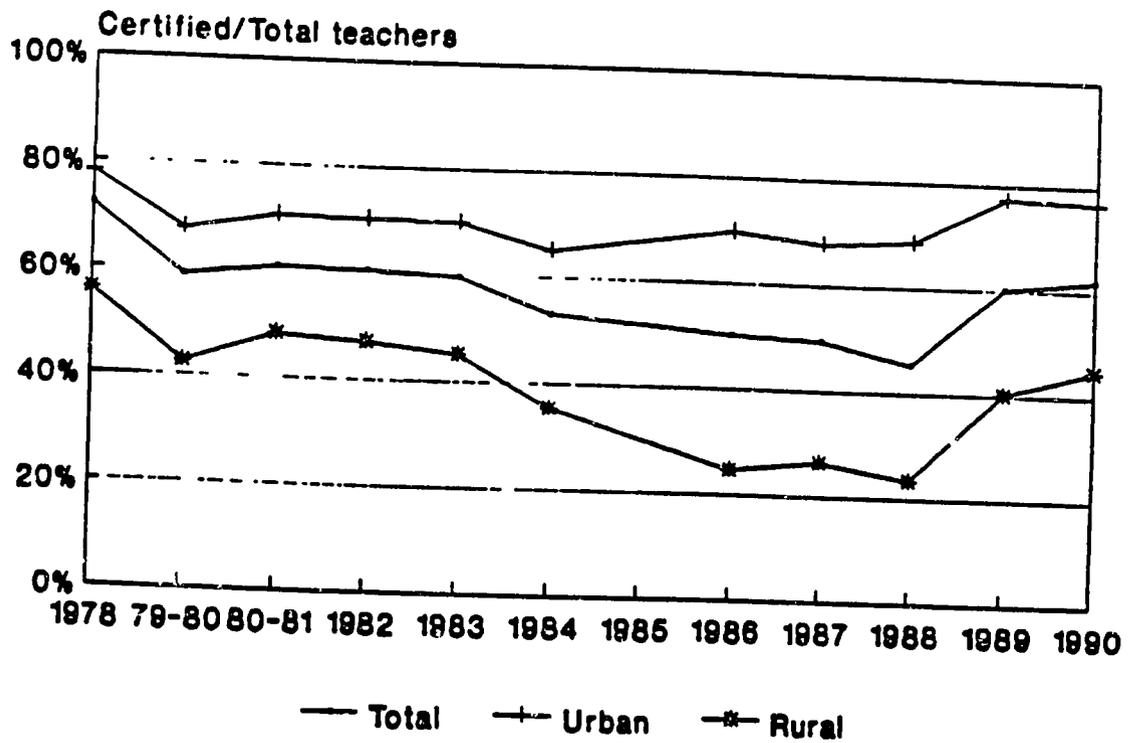


Figure 9. Pupil/teacher ratios
Nicaragua, 1978-1990

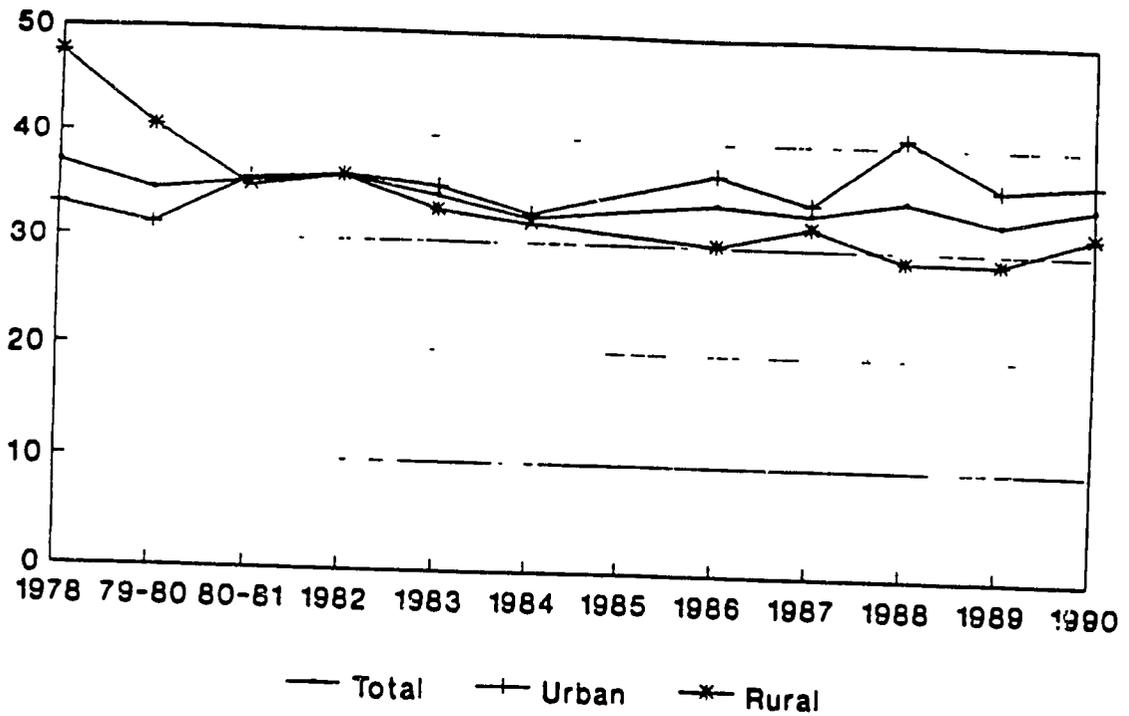
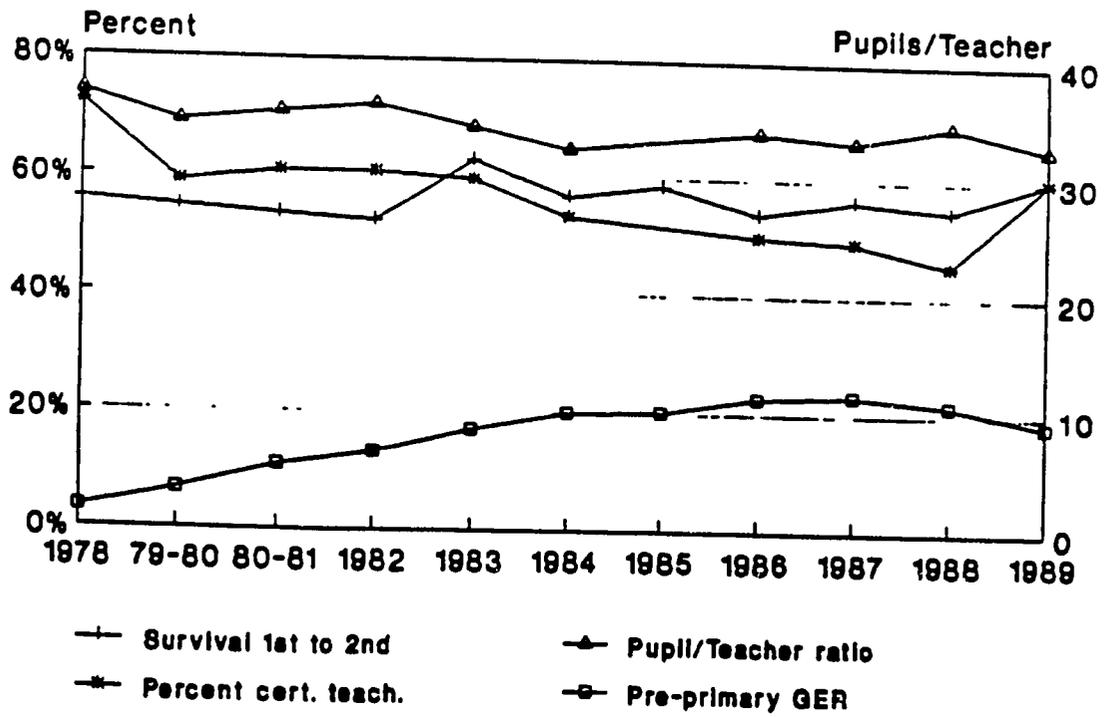


Figure 10. Inputs into education
Nicaragua, 1978-1990



III. LEGAL FRAMEWORK

This chapter presents the legal basis for primary education in Nicaragua. Responsibilities and legal authority for the administration of primary education area also discussed.

A. Legal Climate/Constitutional Basis for Education

Education in Nicaragua is mandated by the *Constitución Política* of 1987 as a function of the central government. *Título VII, Educación Y Cultura*, treats the aims of education. These include the goal of forming individuals who will contribute to the development of society. In order to reach this goal, it is stated that citizens should be educated to think critically, scientifically, and humanistically. Education should also provide opportunity for personal growth which enables citizens to contribute to national and social development (*Artículo 116*). Among other important goals of education mentioned in the constitution are the creation of values in accord with the constitution (*Artículo 117*), and family, community and popular participation in education (*Artículo 118*).

B. Government's Legal Responsibilities with Regard to Education

The *Constitución Política* obligates the state to provide equal and free access without cost to basic education for children and adults alike (*Artículos 121 and 122*), provides for the establishment of private and religious institutions (*Artículos 123 and 124*), and gives autonomy to higher education institutions and faculties (*Artículo 124*). In addition, *Artículos 126, 127, and 128* require the state to promote artistic and cultural development in the area of education, and provide means for protecting intellectual property and national treasures, both archeological and cultural.

Under the broad constitutional framework mentioned above, *Capítulo VI, Decreto 1-90-25* establishes the functions of the Nicaraguan *Ministerio de Educación* (MED). Among these functions are the supervision, regulation, and inspection of public education, and the preservation of both academic freedom, and the rights of parents and teachers to exercise choice in the education of the students. In accordance with these functions, MED also oversees the technical adequacy of teaching at private schools, supervises the training of teaching and administrative personnel, administers a scholarship system, and certifies the granting of professional degrees. In the area of foreign relations, MED has responsibility for certifying those degrees granted abroad to Nicaraguans and for obtaining aid and technical assistance from other countries and

international donors. Moreover, MED has legal responsibility for seeing that the teaching profession is not politicized.

However, the aforementioned *Decreto* does not cover all aspects of MED organization or function. Consequently, even though it was not adopted under the present constitution, the *Ley Orgánica del Ministerio de Educación, Decreto 1,146* of 1982, continues to be followed in those areas which are not directly covered by the 1990 law or directly contradicted or abolished by it. For example, the 1990 law does not cover the powers of the Minister of Education, and the Vice Ministers, and how they are named, but the 1982 law does cover these items. Thus, given the lack of other instructions and the weight of tradition and bureaucratic practice, procedures outlined in the 1982 law continue to be followed.

C. Legal Authority and Responsibilities of Education Administrative Units

Artículo 3 of the 1982 law provides for the naming of the Minister by the President. Vice Ministers are also named by the Executive, rather than by the Minister. This article, however, leaves the management and organization of the MED to the Minister, giving this individual the power to set internal procedures. It also leaves the Minister power to regulate education.

These powers are reflected in a ministerial resolution passed in January of the current year (*Resolución Ministerial, 30 de enero de 1991*). This document defines the responsibilities and functions of MED Executive Management and Executive Staff positions. Thus, the resolution can be viewed as an initial step in developing general internal regulations for the Ministry.

An important earlier outcome of the power vested in the minister is the *Reglamento de Educación Primaria*, issued as an accord of the MED in 1984. Though issued under a different constitution, like the 1982 organic law, this regulation continues to be followed. It sets up the structure of primary schools of Category A (more than 36 teachers) Category B (15 to 36 teachers), Category C (6 to 14 teachers), Category D (3 to 5 teachers), and Category D (1 to 2 teachers). In addition, the law specifies the administrative structure of each *Centro Educativo* (school). For example, it specifies that Category A schools shall have a Director and, for each shift, a Deputy Director. The law also sets up the administrative structure for the other categories.

Much of the foregoing law will be superseded by the *Ley de Carrera Docente* passed in November of 1990. This law establishes the criteria for entry, reentry, and retirement from the teaching profession. Nevertheless, sections of both the *Reglamento de Educación Primaria* and its sister document for secondary education (*La Gaceta, 12/20/83*) have importance and will remain in effect in two ways. First, those parts of the regulations not directly contradicted by the new 1990 law will continue to have some legal force. Second, the weight of bureaucratic practice and the slow pace of change in the MED mitigate for their continued effects.

One example of this from the primary education regulation is that where the 1990 law does not mandate change in administrative organization and practice at the school level, the 1984 regulation will continue to structure school management. Another example is that because of the lack of qualified people or available funds, in many regions, Category A school accountants or secretaries are not hired as such, nevertheless these positions continue to be part of the position descriptions that are used by the MED Central.

D. Laws Governing MED Personnel

Unlike the 1983 and 1984 regulations which derive their legal force from the authority of the Minister of MED, as part of the executive power, to govern the ministry in consultation with the President, the *Ley de Carrera Docente* was promulgated as a law by the Legislative Branch or Assembly. Thus, it has the force to supersede internal regulations where they are found to be in conflict with it. However, the 1990 law itself does not directly contradict the regulations. Instead, it addresses some new questions, and leaves the MED to adopt a new regulation for the implementation of the law.

A proposed *Reglamento* of the law is under discussion at present. The new areas treated are teacher employment criteria and the development of a pay scale based on points for experience honors and the like. The new law also creates commissions for governance and sets up a separate grievance procedure for those in the teaching profession.

The new law does not cover all employees of the MED. It specifically exempts the Minister, Vice Ministers, the Directors General of the MED, as well as Regional and School Directors. In addition, it does not cover those who work in MED support positions or who are administrative personnel, unless they happen to also be members of the teaching profession.

Employees, not in exempt positions, and teachers, in areas that the *Ley de Carrera Docente* does not comprehend, are covered by two other laws. First, employment is generally governed by the *Codigo del Trabajo* of February 1945. This law sets up the rights and duties of employers and employees in all labor whether private or state. It defines employers and employees rights, duties and restrictions, procedures for individual contracting hiring and firing employees, strikes, and unionization. It sets work hours and conditions, and treats such items as vacation time, types of pay, a table of indemnification for accidents and a rudimentary grievance procedure for unjust dismissal. In addition, it creates a system of work inspectors and a labor relations board responsible for labor mediation. *Capitulo XII De Los Servidores del Estado*, extends the rights of the labor code both to public employees who are laborers and to those covered by the civil service law where the two do not conflict. The *Codigo del Trabajo* continues to be the most influential source of procedure for hiring, firing, and discipline, even at MED.

Second, there is the *Ley de Servicio Civil y de La Carrera Administrativa*, of March 1990. This law sets up recruitment, selection, and evaluation procedures that are to be

used throughout the central government. This law covers MED personnel not certified as teachers.

E. Legal Basis for the Funding of Public Education

The constitution guarantees that the State will support education at all levels. Specific funding strategies are not, however, spelled out either in that document or in the Reglamento de Educación Primaria. The regulation does specify that funds raised by schools through special activities, donations, or sales must be used exclusively for school-related endeavors. These include the acquisition of materials, the maintenance of the centers, and financing special activities.

F. Legal Procedures Required for Curriculum Reform

The constitution makes the State responsible for the development of educational plans and programs which includes curriculum. Curriculum development is executed through the MED and no educational institution can adopt plans or programs different from those approved by the Ministry. Further, primary schools are required to develop their programs of study using only texts approved by the MED.

G. Legal Basis for the Participation of Municipalities

Municipalities are defined by law (*Ley de Municipios, La Gaceta, 8/17/1988*) as the basic political administrative unit of Nicaraguan society. Municipalities are formed on historical bases as well as population differences and, above all, the capacity to generate sufficient resources to carry out the functions of local government. There are 148 municipios in the country, each of which has the same responsibilities and functions under the law.

Municipalities are responsible for the development and preservation of the environment within their borders and for providing services to satisfy the necessities of their residents. Services include: controlling the use of land, promoting community health; construction and maintenance of roads, drainage, parks, plazas, and other areas of recreation; as well as promotion of education and culture. The construction of schools and the delivery of formal education are not explicit functions of the municipalities but rather of the central government.

Residents are required to help in the realization of activities and works for the common social good and to contribute to the financial support of the municipality. They are also responsible for electing local officials who form a governing council (*consejo municipal*). This council elects, from its ranks, a mayor who is the chief executive of the municipality.

Through the mayor and the city council, operating funds are raised by charging taxes on property, collecting fees on municipal services, levying fines and soliciting contributions. Contributions may come from national or international sources. The primary source of income is from the central government. Each municipality prepares a budget which is sent to the national executive branch for approval.

Groups of municipalities may organize themselves voluntarily into regional associations. These may carry out activities of mutual benefit in an efficient manner. Such regional groups do not, however, have the right to raise revenues collectively.

At the school level, the community is represented through consultant councils (*consejo consultivo*), made up of the school director, a representative of the teacher corps, a parent and a student. As established by the primary school regulation, these councils for monitoring student progress, organizing school-community activities, and informing all members of the community about the progress of the educational programs.

H. Legal Framework for the Private Sector in the Delivery of Basic Education

The constitution establishes the right of parents to choose the education that they deem most appropriate for their children. The primary school regulation gives the MED the authorization to approve private schools. It also provides the steps necessary for schools to seek certification from the MED. Schools must accept the supervision of the MED as a criterion for acceptance and can be fined or lose their certification for abusing MED regulations.

No legal restrictions exist to the participation of the private sector in public education through philanthropic activities. There are, however, no regulations that govern the procedures for participation of this type. As discussed above, private schools and public subsidies to private schools are governed by MED regulation.

IV. PRIMARY EDUCATION COSTS AND FINANCING

This chapter examines dimensions related to education system costs and financing. It begins with an analysis of a deeply troubled economic and social context where an overall decline has resulted in social well-being below that of 1970. The primary education system has been hit particularly hard by this history. In 1970 total educational expenditures equalled C\$ 454 million (all figures in 1980 cordobas), about 18% of total government expenditures and 2.3% of GDP. By 1978 education's share of GDP had grown modestly from 2.3% in 1970 to 2.6%. By 1984 educational spending reached an all-time high of C\$1337 million, or 6% of GDP, in real terms equal to three times what had been spent in 1970. By 1989 Education's share of GDP decreased to slightly below their level in 1970, total primary education expenditures were one-third of their 1970 level, and on a per pupil basis only 15%. In 1990, the education budget allocated 87.5% for salaries, 7.1% on electricity and water, 1.8% on printing, 1.6% on travel and gas, 0.4% on graphic art, 0.3% on pencils, 0.04% on text books, and 0.03 on school maintenance. Thus providing little room for financing educational interventions.

In examining alternative sources of financing for needed improvements, standard remedies were found not to be workable. Due to deep and widespread poverty and other reasons, cost containment, cost recovery, privatization, and intra-sectoral reallocation strategies are not useful. The three remaining sources of financing -- inter-sectoral reallocation, increased government revenue generation, and foreign aid -- all have potential.

It is recommended that the assistance strategy should emphasize physical plant, books, teacher training and salary, and food programs for students. Adult and preprimary education support should be considered. Consideration should be given to improving the MED's MIS and policy analysis capabilities.

A. Economic and Social Context

The information in this chapter, as in the rest of this report, is the best available, and when possible, has been checked for consistency across sources. That being said, much of these data are tenuous. Price data are especially problematic in a hyperinflationary context and during the last three years Nicaragua may have been the world leader in this regard. More generally, all expenditure estimates are based entirely on accounting data, which often do not accurately reflect expenditure patterns, let alone measure the cost in an economic sense. Still, the data in this chapter do indicate trends and order-of-magnitude changes. In this light, they provide a very sobering assessment of the primary education sector and its context.

While there have been a few development gains over the past decade in Nicaragua, the present socio-economic context within which education is considered is nothing short of disastrous. Two gains have been in health and education: from 1979 to 1988 immunization coverage was substantially increased and the infant mortality rate was

cut in half, from 120 per 1000 live births to 62 (Pena and Urquiza, 1990; Unicef, 1990); and, as shown in several chapters of the assessment, the education system was vastly expanded, most especially rural primary schooling and adult education (OIM, 1990). Even in these areas, however, it should be noted that these mortality rates are relatively high for Latin America (Pena and Urquiza, 1990), and that educational expansion has brought with it all the problems of quality that this report discusses (also see Carnoy and Torres, 1990).

Aside from these two qualified gains the picture is very bleak. Table 13 presents a few selected economic and social indicators which give a picture of the deterioration that has occurred. Columns 1 and 2 show the growth of real GDP (Gross Domestic Product) over the past two decades. Positive growth rates in the early seventies gave way to stagnation in the mid-seventies. The overthrow of the Somoza regime yielded a precipitous drop in GDP -- by over a quarter from 1978 to 1979 -- from which the economy never recovered. Although 1979 to 1983 saw growth in real GDP, it was offset by the decline from 1983 to 1987, and then more than wiped out by the loss of almost 20% between 1987 and 1990.

In per capita terms (not shown in the table) the situation is, of course, worse. A 3.4% annual population growth during the eighties means the gain or decline in GDP per capita is about 3.4% lower than the figures given in Table 13. In overall terms, this means that while real GDP declined about 36% between 1978 and 1990, over the same period GDP/capita declined about 57%.

The discussion above of real growth needs to be considered in conjunction with the level of price stability in the economy. As can be seen from Table 13, the rate of inflation in consumer prices increased considerably with the advent of the Sandinista government. While inflation in the early eighties was not out of line with that experienced in a number of other Latin American countries, by 1985 a rapid acceleration had begun. This led to the hyperinflation and drastic economic policy initiatives of the last several years. It is difficult to convey a sense of the magnitude of such a hyperinflation phenomenon in a realistic manner. For example, cumulatively, a consumer price index for Nicaragua assigned the value of 100 in 1980 by 1990 would equal over 7 billion!

Before analyzing the remaining columns in Table 13 which attempt to portray some of the social consequences of the economic decline, it is worth saying a few words about some of the causes of this decline. Although analysts will probably debate the relative weight of various factors contributing to the decline (e.g. Griffin, 1988; Weeks, 1988; Close, 1988), many agree on the principal causes. This is of interest to this report chiefly because the degree of severity of Nicaragua's economic problems will set an important constraint on the search for solutions to Nicaragua's educational problems.

Table 13: Selected Economic and Social Indicators

YEAR	GDP (billions 1980 cord)	GDP GROWTH (annual % change)	INFLATIO N RATE (annual % change)	SALARY INDEX (1980=100)	UN- AND UNDER- EMPLOYME NT (% of pop)	AVG. CALORIC CONSUMPTI ON (% of req. minimum)
1970	20.0	--	--	NA	16	NA
1975	26.2	5.5	12	NA	21	NA
1978	27.0	1.0	4	NA	18	NA
1979	19.9	-26.5	48	NA	32	NA
1980	20.8	4.6	35	100	18	NA
1981	21.9	5.4	24	91.6	16	121
1982	21.7	-0.8	25	81.3	20	114
1983	22.7	4.6	31	69.8	19	130
1984	22.4	-1.6	35	66.7	21	121
1985	21.5	-4.1	220	48.4	21	123
1986	21.3	-1.0	682	20.3	22	117
1987	21.1	-0.7	912	6.8	24	104
1988	18.8	-10.9	14,316	4.7	27	87
1989	18.2	-3.0	4,770	7.8	33	86
1990	17.2	-5.7	11,788	NA	NA	NA

SOURCES: AID Nicaraguan mission; SPP, 1990; World Bank, 1990; INEC, 1989

a. NA signifies no data for that year were available. The first two numbers in each of the GDP growth and the inflation rate column give the average annual growth over the indicated time period. The salary index reflects changes in real wages in the formal sector. The definition of un- and under-employment is given in the text. Average calories consumption per day per person is expressed as a percent of the required minimum of 1850.

The agreement about the sources of economic decline centers on the serious losses caused by a number of social and natural disasters. The overthrow of Somoza was very costly. The data in Table 13 show that almost three-quarters of the drop in GDP between 1978 and 1990 occurred in that first year, 1978 to 1979. Moreover, that drop only reflects a part of the total loss. About 35,000 people died in the conflict (2.5% of the adult population) and 10,000 were seriously injured. A World Bank estimate of the 1978-1980 loss in production due to the conflict was \$800/capita, totalling more than a

year's GDP. In addition, there was a significant destruction of manufacturing capacity (some say 20%), the looting of the national treasury by Somoza, and substantial capital flight. An estimate of the total costs of this conflict by CEPAL equalled US\$ 2.2 billion (World Bank and UN organizations data reported by Weeks, 1990; CEPAL data in OIM,1990).

Natural disasters yielded other major losses for the economy. In 1982 tropical storm Alice resulted in US\$ 350 million in damages. Floods and earthquakes in 1984 and 1986 caused well over US\$ 100 million in losses. But most devastating of all was Hurricane Joan in 1988 which, over a period of 10 hours, cut a swathe across 200 miles of Nicaragua with winds over 100 mph. The damage was enormous in terms of loss of agricultural products, homes, schools and clinics. Long run damage to forests, land productivity, and other parts of the ecology was serious. Estimates of the losses in economic terms are over US\$ 800 million, about 25% of 1987 GDP (OIM, 1990; Pena and Urquiza, 1990).

While there is considerable agreement regarding the factors above, the principal debate centers around how much of the 1980s' decline is attributable to the poor economic policies of the FSLN government versus to the costs imposed by the U.S. economic embargo and the war with the Contras. Nonetheless, despite disagreement about relative weights, all sides acknowledge that both were problematic, as well as interrelated.

The FSLN government increased the state's share in the economy by more than could be paid for or managed. Although gradual at first, in 1983 government expenditures went from about 40% to 60% of GDP. Government revenues did not go up by nearly as much. This began a long series of sizeable fiscal deficits that fed the soon-to-come inflationary spiral. The increased government expenditure in 1983 was partly due to a more serious military build-up, but also reflected increased attention to social programs. However, the latter were quickly eroded as the war became more costly. In 1983 defense took 18% of the government budget, whereas by 1987 it had reached 45%. While estimates of the costs of the embargo and the war to the Nicaraguan economy are necessarily fraught with difficulty, some estimates put such costs at US\$ 18 billion. A recent study by the International Organization for Migration noted that the sum of all the disasters above implied a loss for the decade equal to almost 10 times 1988 GDP (OIM,1990; INEC, 1989; SPP, 1990).

The point of the analysis above is to emphasize that the causes of the present situation are multiple and very complex. Even analysts very critical of the FSLN government point out that many of Nicaragua's problems stem from earlier history. The particular agricultural export model followed in Somoza days led to severe polarization, inequality, and poverty. An overall economic depression brought a steady decline in average income throughout the seventies. This history still affects Nicaragua in many ways (Close, 1988; Griffin, 1988; also see World Bank, 1990).

There are no quick fixes for the cumulative effects of all these forces. Efforts to deal with spiralling inflation, which began under the FSLN as early as 1985 has met with

limited success. Even the drastic reform in 1989, when, among other measures, the FSLN government cut the state's share in the economy to pre-revolution levels, did nothing to stop hyperinflation. Whether the recent (March 1991) major devaluation and cuts in real wages by the Chamorro government will work remains to be seen. Regardless of its success, the point to remember is that there is a very long way to go for Nicaragua to achieve even modest levels of well-being.

The current living conditions in Nicaragua for the vast majority of people are desperate -- a reflection of the economic conditions and history above. Returning to the data in Table 13, the last three columns show changes over time in three indices of well-being. The salary index is based on average real earnings in the formal sector of the economy. Although no strictly comparable data are available prior to 1980, real earnings per employee in manufacturing fell by almost one-quarter between 1972 and 1980. However, from 1980 to 1989, the average real salary fell by over 90%. This fall in average income was considerably worse than the fall in GNP per capita, reflecting increased individual and sectoral inequalities brought on by the deepening crises.

It is important to point out that the situation cannot be quite as bad as it looks from these data. If most people were very poor in 1980, including those working in the formal sector, they could not be surviving on 7.8% of what they previously earned. Obviously there are a number of factors (aside from the vagaries of the data themselves) that mediate the picture. Chief among them is that with rapid or hyperinflation it is very difficult to hold purchasing power constant, so that those at lower incomes are unlikely (indeed, unable) to be as much worse off as the data imply. Also, as in many countries, including the U.S., there are more family members working to raise family income, and the degree to which traditional and informal sector systems of livelihood are tapped also changes the picture. Nonetheless, even with the above caveats, this approximation of the real salary decline is frightening in its magnitude.

The difficulty of the situation is further reinforced by the combined un- and under-employment figures given in the next-to-the-last column of Table 13. These published figures combine three categories of the economically active population: those out of work and looking; those working in part-time jobs because they cannot find full-time work; and those not in the previous category, working part or full-time and earning less than a minimum income level. The trends in these data are consistent with the other economic indicators in the table. In the early eighties the employment picture was fairly stable. In the latter half of the eighties the situation worsened, with significant jumps in un- and under-employment registered in 1987, 1988, and, especially, 1989. The 1989 figure indicates that fully one-third of the labor force is un- or under-employed (SPP, 1990).

The employment situation is likely to worsen. A November, 1990 report on vocational-technical training needs in Nicaragua by Creative Associates International (1990) estimates a very large increase in new entrants to the labor force. With demobilized soldiers from both sides, returning refugees from Honduras and Costa Rica, and reductions in overstuffed public enterprises, added to normal new labor market entrants, they predict an influx of almost 200,000 new job seekers. This is about half the

size of the group already un- and under-employed, signifying substantial problems with their absorption into the economy, and implying further deterioration in the standard of living and a further increase in poverty.

The ultimate consequence of the sobering picture presented in this section is, of course, the effects on people's lives. Recent data investigating the extent of poverty and its consequences are scarce. The last national household survey was completed in 1985 and that concluded that 69.4% of the population was living below the poverty line (SPP, 1990). (Given the problems with an income-based definition in a society like Nicaragua, the study used a household characteristics-based definition and an examination of some more recent data specific to Managua. See Chapter XI for a discussion of these findings.

If 1985 data show 70% of the country living in poverty, how much worse must it be now since the steepest slide in income and employment occurred in the last half of the eighties? The last column of Table 13 presents one of the most important indicators of poverty, the average number of calories consumed per day per person, as a percent of the minimum required level (1850 calories). From 1985 to 1989 there was a loss from an average consumption of 123% of the minimum to an average of only 86% of the minimum. Given this and distributional inequalities, Nicaragua is probably facing a very serious malnutrition problem. (Field observation and health statistics confirm this, as discussed in Chapter X)

In summary, the long run and shorter run history of Nicaragua have led it into a very desperate situation. The economy is not functioning well enough to provide minimal levels of well-being and the social consequences have been profound. Add to this the tensions of the war aftermath and the fragile truce between FSLN and UNO supporters and there is a potentially explosive situation. This is not to bemoan the situation. The point of this analysis is two-fold. First, it conditions understanding of the past and present educational situation; more importantly, it provides a framework in developing strategies of assistance to the education sector that can provide some needed quick results without being unrealistic about the possibilities for short term solutions.

B. Overview of Educational System Expenditures

The above history is reflected, as might be expected, in a very uneven development of educational expenditures over time. Table 14 presents government real expenditures on education over time and their relationship to total government expenditures and GDP. (No data are available on local government educational expenditures over time, but the magnitude is reported to have always been small and to be currently non-existent.) Data on GDP changes from Table 13 and total government expenditure changes (not in the tables) are drawn on below to help interpret the expenditure picture in Table 14.

Table 14: Education's Share of Government Expenditures and GDP

YEAR	EDUCATIONAL EXPENDITURE (millions, 1980 cord)	GROWTH IN EDUCATIONAL EXPENDITURE (annual % change)	EDUCATION EXPENDITURE AS % OF GOV'T EXPENDITURE	EDUCATION EXPEND. AS % OF GDP
1970	454		18.1	2.3
1975	611	6.1	13.1	2.4
1978	680	3.6	10.3	2.6
1979	576	-15.3	14.2	2.9
1980	773	34.2	11.1	3.7
1981	1009	30.5	13.4	4.6
1982	867	-14.1	10.2	4.3
1983	1182	36.3	12.2	5.2
1984	1337	13.1	10.0	6.0
1985	1207	-9.8	10.1	5.6
1986	1306	8.2	12.3	6.2
1987	1130	-13.5	12.0	5.3
1988	759	-32.8	9.0	4.1
1989	410	-46.0	8.8	2.2

SOURCES: AID Nicaraguan mission; Ministry of Finance; MED; World Bank, 1990; Arriens, 1989

a. Educational expenditures are by the central government (as is true in all tables) and includes spending on higher education. The first two entries in the growth in expenditures column give the average annual growth over the indicated time period.

In 1970, total educational expenditures equalled C\$ 454 million (all figures in 1980 cordobas), about 18% of total government expenditures and 2.3% of GDP. While 18% is the highest share of government expenditures education claims over the next 20 years, it merely reflected the extremely low level of government services in this era. By 1975, total government expenditures had expanded very rapidly (85% over 1970), providing funds for the less rapid but still substantial increase in educational expenditures (6.1%/year). These educational spending increases paralleled GDP growth and with the slowing of the economy, educational expansion also slowed. By the eve of the revolution in 1978, education's share of GDP had grown modestly from 2.3% in 1970 to 2.6%. It should be noted that the fall in the share of the government budget devoted to education was possible because Somoza had basically doubled the share of the government in the economy over this same period, from about 12% to 24%.

With the revolution and the FSLN's emphasis on education, the picture changed dramatically. Even with the 27% fall in GDP in 1979 and an almost 40% fall in total government expenditures, educational spending cuts were only 15%. Thereafter began a program of rapid educational expansion that basically continued for five years. By 1984, educational spending reached an all-time high of C\$1337 million, or 6% of GDP, in real terms equal to three times that which had been spent in 1970.

Table 15: Financial Sources and Uses of Educational Expenditures
(percent Share)

YEAR	FROM FOREIGN AID	FOR CAPITAL INVESTMENT	FOR PERSONNEL
1970	NA	5.1	94.0
1975	NA	20.1	94.5
1978	8.8	4.8	92.9
1979	0.2	1.8	95.2
1980	9.3	18.5	NA
1981	13.5	14.2	NA
1982	6.7	10.8	NA
1983	2.7	12.0	NA
1984	6.9	8.7	87.5
1985	1.7	3.3	91.0
1986	0.3	5.9	85.0
1987	1.1	2.8	81.3
1988	NA	2.0	NA
1989	NA	4.3	71.0
1990	NA	1.3	87.5

SOURCES: MED; Arriens, 1989

a. NA signifies no data for that year were available. All categories include higher education spending except for personnel expenses in 1989 and 1990. This last column reflects the percent of direct recurrent expenditures spent on personnel. This excludes current transfers, much of which are personnel benefit expenses. It was not possible to break down this category, but inclusion would likely raise the proportion attributable to personnel.

This was not sustainable given the economic and social problems facing Nicaragua in the last half of the eighties. The overall government budget was cut about 10% a year in real terms every year between 1984 and 1988. Educational spending levels were protected for a time, but in 1988, educational expenditures were cut by almost one-third.

With the drastic economic reforms of 1989 that cut public sector expenditures by 55% in one year, cutting government back to its pre-revolution size, educational spending was decimated. Real expenditures on education were cut 46%, to C\$ 410 million or 2.2% of GDP. This was less in both real terms and relative share terms than was being spent on vastly fewer students two decades earlier, in 1970.

The consequences of this sharp turndown are just beginning to be perceived. A crumbling physical infrastructure, a labor force of teachers who cannot live on their salaries and consequent motivational problems, the absence of any other resources for students beyond teachers, and other issues will be examined throughout this report. Now it should be simply pointed out that, in the aggregate, the data indicate a very difficult situation.

The remainder of this section examines, at an aggregate level, some of the sources for and uses of educational expenditures in Nicaragua. In particular, Table 15 provides information on the extent to which expenditures are financed internally versus from external aid and on the extent to which they are spent on capital and on personnel. The data available are sketchy and perhaps more inaccurate than the rest.

Foreign aid, as one might expect, is erratic. In 1978 it was relatively substantial and after the revolution it picked up again, although varying considerably throughout the first half of the eighties. From 1985 to 1988 foreign aid basically disappeared, and, after that, data are not available.

While foreign aid did not finance the early eighties expansion, it helped, and perhaps helped especially with capital expenses, either directly or by freeing up internal financing. The share of the education budget devoted to capital expenditures is shown in the second column of Table 15. The expansion of the early eighties required steady and substantial capital investment. By the last half of the eighties expansion had tapered off and economic and social difficulties heightened, yielding low levels of capital investment and maintenance which is having serious repercussions now.

The most sketchy data in Table 15 are those given for the proportion of recurrent costs spent on personnel. Data for some years are unavailable, definitions of categories are problematic (see table footnotes), and some anomalies are unexplainable. The principal anomaly is the unusually low proportion (71%) of recurrent costs spent on personnel in 1989. Data for that year show an unusually high expenditure on printing (12% of recurrent costs) and on internal travel and gasoline (7%). Much more typical of past years are the 1990 data, showing 87.5% of recurrent costs spent on personnel. Such a measure is sometimes used to indicate the degree of flexibility a country has with respect to providing non-teacher inputs. Nicaragua's situation may seem slightly better than countries where these measures are over 90%, but this depends on what expenses are included in particular budget categories. Basically, the Nicaragua data do not indicate any significant provision of non-teacher educational inputs nor any ability to do so. In 1990, the other 12.5% of the recurrent budget breaks down as follows: 7.1% on electricity and water; 1.8% on printing; 1.6% on travel and gas; 0.4% on graphic art; 0.3% on pencils; school texts only get 0.04% and school maintenance 0.03%.

**Table 16: Share of Educational Expenditures by Level
(In Percent)**

YEAR	GEN'L ADMIN.	SPECIAL EDUC.	PRE- PRIMARY	PRIMARY	SECON D. & TECH.	NORMA L	ADUL T	HIGHE R	OTHE R INSTI T.	TOTA L
1970	2	--	--	62	15	1	--	16	2	98
1975	2	--	--	52	23	1	--	16	2	96
1978	14	--	--	44	22	2	--	12	7	101
1979	8	--	--	49	25	2	--	14	2	100
1980	26	1	1	34	19	1	3	15	2	100
1981	17	1	1	32	16	1	7	16	8	99
1982	16	1	1	32	15	1	7	20	7	100
1983	18	1	1	30	13	1	8	25	3	100
1984	14	1	2	33	14	2	7	21	7	101
1985 - 88	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1989	37	1	2	23	11	2	NA	20	--	99
1990	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1991	16	1	2	32	13	3	3	30	--	99

SOURCES: MED, Ministry of Finance

a. NA signifies no data for that year were available and dashes signify that no effort in this area was reported in MED expenditure data. This table reports on data that were more than usually inconsistent across sources. Normal cautions in interpretation should be considerably strengthened. Some of the more glaring problems are as follows. The general administration category is supposed to include central, regional, and generalized project work. What it does include from year-to-year is not at all clear. For example in 1980, half of it was capital expense and in 1989 a large proportion was printing. Also, in 1989, some categorizations were changed so that the separation of primary school expenses from secondary needed interpolation based on previous years experience. Finally, it should be noted that 1991 data are based on the budget, not actual expenditures. Moreover, with the March 1991 devaluation relative shares of the budget could change.

C. Primary Education

The previous section examines some of the expenditure and financing patterns of the overall educational system. The focus of this report is basic education and these patterns both condition and reflect the state of basic education. Other chapters of this report discuss the severity with which the combined social and economic crisis has influenced primary and adult education. This section looks at the expenditure and financing data that specifically describe basic education. The focus is on three dimensions: the relative share of educational expenditures spent on primary education; how that translates into differences in expenditures per student across levels of education; and the performance over time of primary school teacher salaries.

Table 16 gives estimates of the share of education expenditures going to different levels of education. It should be mentioned that much of these data are suspect. Analysis based on accounting data in which categories are changed over time, totals sometimes do not add up, and different sources come up with different estimates. Nonetheless, it is useful to demonstrate the order of magnitude of trends.

For the seventies overall, the share of expenditures going to the primary level decreased through 1978, as did the share going to higher education, at least after 1975. To what extent this is due to an increase in general administration costs is unclear. It is entirely possible that administration costs were of similar magnitude in earlier years, but were accounted for as part of the costs incurred at each level. However, most sources do concur that there was a drop in primary and secondary schooling share of the budget in 1980 or 1981, as adult education, pre-primary, special education, and work with other institutions expanded. At the peak of the FSLN educational expansion in 1984, primary education received 33% of the budget, secondary and technical 14%, higher education 21%, and adult education 7%. Pre-primary, special, and normal school education only took up 1% to 2% each. General administration received 14%, the same percentage as in 1978.

No breakdown by educational level is available for 1985 to 1988 and the data for 1989 are even more problematic than those above. In particular, the 37% share going to administration is not explainable (this is related to the personnel cost discussion of Table 15). Given the steep fall in educational expenditures between 1984 and 1989, it is possible that the table accurately reflects a reduction in the share of primary education and secondary and technical education to 23% and 11% respectively, and that higher education was able to maintain its 20% share. On the other hand, all this could be an artifact of the data categorization if some of the administration expenditures should really be assigned to primary or secondary levels.

The 1991 data are of a completely different kind -- they are based on the projected budget for this coming year, not actual expenditures. Moreover, this budget is currently the subject of renegotiation as part of the March 1991 devaluation package procedures. Current student demonstrations, newspaper articles, and talk shows center around which levels will gain a higher share. Still, the budget shares given on Table 16 are of interest as intentions. They are remarkably similar in distribution to those of 1984

with two exceptions: the share going to adult education was cut in half, the cooperative educational work with other institutions (health, labor, etc.) was eliminated (at least from the MED budget). These reductions fueled the increased share going to higher education.

Table 17: Primary Education Expenditures Versus Other Levels

YEAR	PRIMARY. ED. EXPENDITURES. (millions 1980 cordobas)	EXPEND. PER STUDENT (1980 cordobas.)	RATIO OF EXPEND./STUDENT TO THAT OF PRIMARY LEVEL				
			Pre-prim.	Sec.	Normal	Higher	Adult
1970	281.5	1162	NA	NA	NA	NA	NA
1975	317.7	1073	NA	NA	NA	NA	NA
1978	299.2	887	NA	1.6	7.0	5.1	NA
1979	282.2	780	NA	1.7	8.7	4.4	NA
1980	262.8	632	.2	1.7	7.7	3.7	3
1981	322.9	777	.5	1.6	8.6	5.7	.7
1982	277.4	625	.5	1.8	5.6	8.3	.8
1983	354.6	759	.4	1.6	2.4	9.7	.9
1984	441.2	949	.5	1.5	3.3	8.6	.8
1985-88	NA	NA	NA	NA	NA	NA	NA
1989	94.3	183	.9	NA	5.4	14.7	NA

SOURCES: MED, Ministry of Finance; Lockheed and Verspoor, 1990; UNESCO, 1990, 1983

a. NA signifies data inavailability. Since these data are based on that in Table 16, the same cautions apply. Additional issues are as follows: per student expenditures are based on public school enrollments yielding a small overstatement of primary school costs and a small misstatement of certain ratios due to private school subsidization; technical and special education are not included; primary level enrollment data for 1981 are not available and the MED uses 1980 enrollments as a proxy, thus overstating 1981 expenditures per pupil; and in 1989, higher education per student expenditures are based on 1988 enrollments.

The significance of changing relative shares within the educational budget is not clear without more information, principally about changes in the overall levels of spending and about changes in the number of students on which these resources are spent. In Table 17, this information is combined with that in the previous table to yield a picture of changes in overall and per student primary level expenditures, as well as the latter's relation to per student expenditures at selected other educational levels. Given that Table 17 is based on all the vagaries of the data in the previous table, the same cautions apply to interpretation.

The first two columns of Table 17 show total and per pupil primary education expenditures for 1970, 1975, 1978-1984, and 1989. Total expenditures see-saw through

1982. They rise in the early seventies, decline through 1980, rise in 1981, and decline in 1982 to a little below their 1970 level. Over the next two years total expenditures rise sharply to a peak in 1984. The pattern for per pupil expenditures was different. There was no wave effect, but rather a straight decline from 1970 to 1982, as pupil expansion far outstripped the additional funding given to primary education. The up-turn shown in 1981 is probably an error, as actual enrollment data are missing for that year. By 1982, real per pupil expenditures had descended to about half their level in 1970.

In 1983 and 1984, substantial recovery was made, but from this was followed by the rapid fall discussed previously. Although there are no data available for 1985 to 1988, the 1989 data give a rough estimate of the total. To the extent this is true, things are much worse than the picture presented in Table 17. That table shows that overall educational expenditures and share of GDP by 1989 had fallen back to slightly below their level in 1970. Table 17 shows that primary schooling was affected to a greater degree than education overall. By 1989, total primary education expenditures were one-third of their 1970 level, and on a per pupil basis, they were only 15% of their level two decades earlier.

Table 18: Changes in Monthly Teacher Salaries

YEAR	IN THOUSANDS OF CURRENT CORDOBAS	IN 1980 CORDOBAS	EXPRESSED IN INDEX FORM (1980=100)
1979	1.4	1894	135.2
1980	1.4	1400	100.0
1981	1.4	1131	80.7
1982	1.4	906	64.7
1983	1.8	888	63.4
1984	3.1	1124	80.3
1985	8.7	996	71.1
1986	28.5	416	29.7
1987	135.3	195	13.9
1988	11,075.0	110	7.9
1989	299,427.0	62	4.4

SOURCES: AID Nicaraguan mission; MED

a. These data come from salary schedules for beginning qualified teachers, i.e., graduates of normal schools. The same trends would characterize the salary of unqualified teachers who earn about 90% to 95% of those reported here. Current cordobas are old cordobas; in 1988 there was a 1 to 1000 conversion. Average monthly salaries in current cordobas are a weighted average: for, example in January 1989 new teachers received about 66 million (old) cordobas, but by December they were receiving about C\$ 676 million.

The last five columns of Table 17 give a rough idea of the trends with other levels of education in relation to primary school. Each column shows the ratio of expenditures per student in a given level to primary level expenditures per pupil. Thus, it can be seen that pre-school and adult education programs generally spend respectively 50% to 80% per student of that spent on primary schooling (although, by 1990, pre-school reached 90%). On the contrary, secondary schooling is about 50% to 80% more expensive per student than primary school. Normal schools run from about three to nine times higher than primary (although the year to year variation makes the data suspect). Higher education expenses, until 1989, ran from about four to ten times those of primary school, and in 1989, reached 15 times the level of primary schooling.

There are no clear guides to interpreting these ratios. Most economists would say that whether high levels of costs are justified depends on the benefits, but benefit data are always scarce and usually subject to multiple interpretations. In the absence of such data, judgements based on knowledge of the context and experience elsewhere must be made. Secondary school costs seem quite reasonable in light of experience elsewhere. Normal school costs are often relatively high if they are boarding schools and if their role include in-service teacher training as in Nicaragua. It should also be remembered that normal schools only account for 2% to 3% of the education budget, so their costs have a relatively low impact.

Higher education does account for a significant share of the budget, but even so, 10 to 15 times per pupil primary school expenditures is well within range of that spent by similar countries. A recent report indicated that in 1990, higher education institutions spent US\$30 million on about 32,000 students, or US\$940/student (Barricada, March 20, 1991). In absolute terms, this is very reasonable by international standards; indeed, it indicates serious quality problems. Such problems were confirmed through interviews with university personnel. These issues will be returned to when examining alternate sources for financing primary education. To conclude this section, it is important to examine the serious decline in primary education in terms of its chief resource, the primary school teacher.

The devastating decline in resources devoted to primary education is perhaps most apparent in what has happened to teacher salaries over the past decade. Table 18 shows the changes in the starting salary of qualified primary school teachers from 1979 to 1989 (unqualified teachers, or "empiricos," earned 5% to 10% less, exhibiting the same changes over time as shown for normal school graduates). To illustrate the magnitude of the inflation problem in terms of what it means in people's lives, the first column gives the changes in average monthly salary over the years, starting with C\$1400 in 1979, reaching C\$299 million in 1989 (it was so bad that in 1988 they converted 1000 old cordobas to 1 new cordoba -- the '88 and '89 figures in column 1 are in old cordobas so as to be comparable).

The more meaningful salary measure is given in the second column of Table 18, which uses constant 1980 cordobas, after correcting for inflationary changes. This column shows the steady and strong decline in real purchasing power that has faced primary

school teachers, except for a momentary rise in 1984. The third column makes the magnitude of the decline more apparent by converting the second column to an index with 1980 salary set to 100. While the available statistical data indicates that teacher salaries are 4.4% of their 1980 levels, this may not be an accurate calculation of their buying power for goods and services. Whatever, the actual figure is, teachers are making considerably less in real terms than a decade ago.

As in looking at average salary data earlier (Table 13), it should be noted that these numbers cannot be taken literally. Teachers were not well off in 1980 and could not be living on 95% less than they were at that time. The problem is that it is extremely difficult to "correct" accurately for inflation, especially of the virulence experienced in Nicaragua. Again, teachers, as did other wage earners, adopted strategies of multiple jobs, shared households and the like to compensate for lost income. Nonetheless, this sharp drop in teachers' real income reflects a decline into serious poverty. Relative to the drop in average formal sector salaries shown in Table 13, the fate of teachers has been even more severe.

The economic condition of workers was so severe that the government started a food supplement program in 1988. The AFA (arroz, frijoles y azucar) program provides monthly supplements to government and participating private sector workers of rice, beans, and sugar, and it is still continued. However, workers are charged 5% of their salary for this and it is estimated that this covers two-thirds the program costs. Thus, it is only a small salary supplement, but it does provide staples and probably increases internal production of these commodities.

The above picture of teachers' economic well-being is strongly confirmed by interviews and field observations. There is an increasing problem with teacher motivation, recruitment, and retention. The economy is so bad at the moment that there are few alternatives for teachers. However, if salaries stay at these abysmally low levels, as soon as the economy starts to improve many teachers are likely to leave the profession. When this is added to the need to replace the majority of USAID-donated textbooks that will be used up over the next two years and the problems with school infrastructure that are discussed in other chapters, the conclusion of this section must be that economically, primary education is on the brink of catastrophe.

D. Financing Issues

The economic problems facing Nicaraguan education as a whole, and primary education specifically, may be the worst in Latin America. Even if the economy can begin to turn around, there is such a long way to go, that relying on economic growth as the motor for educational (and other sectoral) progress is untenable in the short-run. There are no easy solutions nor quick fixes. Considerable additional funding is necessary to assist the basic education system to function at a basic level. To move towards the more ambitious goals agreed to by the Education for All signatories would obviously require massive funding. This section examines why most of the standard alternatives aimed at increasing educational system revenues do not seem applicable to the Nicaraguan reality and then considers what are alternative sources of revenue.

Before turning to that discussion, a point should be made about the budget tracking and execution process. AID wished to know whether any technical assistance might be needed in this area. Overall, as is typical, the budget-making process is a political bargaining structure in which MED makes a proposal, the Ministry of Finance offers a counter, generally much lower proposal, and after additional rounds of negotiating, it goes to the National Assembly for debate and approval. For the 1991 budget, MED initially asked for about US\$115 million. This was cut back to US\$64 million, and finally another US\$4 million was added by the Assembly.

At the execution and tracking stage everything is tightly controlled by the Ministry of Finance. This Ministry directly disburses 80% to 90% of educational expenditures itself, paying all personnel salaries and many contractors. Those payments that go through MED are closely monitored, disbursed monthly, and do not continue without proof of disbursements. Given such tight control this appears to be one area where technical assistance is not needed.

1. Standard Remedies

This section analyzes four often-discussed sources for additional primary (and other) school system funding and briefly examines their applicability in Nicaragua. The principal problem, as might be expected, is that the degree of poverty makes most remedies impossible.

a. Cost Containment

There is no possibility for cost containment in a primary education system where basically the only resource being provided to students is a very low-paid teacher. Indeed, the cost per student for primary education must rise if a minimal level of quality is to be obtained. Teacher salaries are significantly below that which is necessary to attract and retain qualified teachers, especially when the economy improves. Moreover, additional resources are essential for physical plant improvement, textbook replacement, teacher training and so forth.

b. Cost Recovery and Finance Decentralization

Decentralizing finance by requiring or encouraging community contributions is severely limited by widespread poverty. What is possible is a program that was operating until the mid-eighties. Under this program the MED supplied the materials and the community supplied the labor for school construction. This program was effectively discontinued as resources for construction disappeared. It could be re-vitalized if resources for investment in physical plant were found, but, overall, communities can do little to alleviate the education budget difficulties.

For the same reason, cost recovery from individual families through some sort of user fee is very problematic. The MED decision this year to charge for USAID donated textbooks is beginning to make this apparent. As discussed in Chapter XI, many parents are very upset with the policy, pointing out how it is a tradeoff between food for their families or books, and suggesting that they are being forced to withdraw their children from school. And this is with relatively low costs, ranging in the public schools from US\$1.20 per package to about US\$7.00, depending on the grade level. Although there is a reduction/exemption process for the poor, it is very unevenly implemented and still requires payment from the poorest if they only have one child in primary school. This policy has already generated unfavorable publicity and, in the aggregate, it is unlikely to generate sufficient money to justify its many costs. In such an environment, user fees of any type at the primary school level do not offer even a partial solution to resource shortages. Their implementation could well increase already high dropout levels. At this point the policy for charging for texts is not clearly defined, but it is clear that paying for texts would be a hardship for the majority of parents.

c. Private Sector Involvement

The severity of poverty in Nicaragua also constrains the extent to which the private sector can play more of a significant role in education. As examined in Chapter II, private schools currently enroll about 13% of primary school students. This has stayed relatively steady throughout the eighties and is only slightly lower than the 15% enrolled in 1978. Basically, all the middle class families that can afford to send their children to private schools have already done so and there is little room for expansion.

More likely there will be some reduction in private school involvement in primary schooling. As pointed out in Chapter II, about 60% of private school primary level students are in state-subsidized schools. This subsidization of mostly religious schools has long been a practice, not much changed in level from Somoza's days until the end of the eighties. There are, of course, valid educational and social reasons for doing so, but with public schools facing the difficulties discussed in this report, those reasons are increasingly outweighed by the need to free resources, as well as by the inequities of subsidization. Such considerations have led the UNO government to drastically reduce its subsidies to private schools. These subsidies consist principally of providing teachers. In 1989, 554 teachers were provided to subsidized private primary schools (which had about 1300 teachers in total); by 1991, this subsidy had fallen about 35% to 360 teachers. (It should be noted that the total cutback, to primary and secondary schools, was even sharper, from 1920 workers (not all teachers) to 915 over the same period.) As a consequence of these and economic changes over the past two years, private schools have raised their fees. It is therefore likely that the enrollment share of private education will be decreasing.

d. Reallocation Within Education

There has been considerable attention during the eighties to the possibility of reallocating resources between education levels. In particular, it is sometimes argued that, in the absence of other sources of revenue, it may make sense to cut public expenditures on higher education and use those resources to invest more in primary education. The justification is on two main grounds: first, research indicates that primary education generally has a higher return on investment than higher education (in terms of its effects on future salaries relative to its costs); and second, given the much higher costs of higher education and its restriction to a small elite, it is also in the interests of greater societal equity to transfer money from higher to primary education.

Although there are not sufficient data available to calculate reliable rates of return, it may be true that returns to primary education are greater than for higher education in Nicaragua. Also, it is unquestionably true that higher education spends much more money on a very small proportion of the populace. Nonetheless, there are widely recognized limits to these arguments that would indicate that it is probably neither feasible nor desirable to cut back on higher education in Nicaragua (in a recent World Bank study, Haddad, et.al.,1990, point to these limits on a global basis).

First, while this chapter has shown that a significant proportion of total educational spending does go to higher education, it has also been seen that per student costs do not seem excessive. In relative terms, 10 to even 15 times the per student costs of primary education is towards the low end of the experience in comparable countries. Moreover, in absolute terms, the less than US\$1000 per student expenditures reported for 1990 are too low to operate a quality higher educational system. Interviews and reports about higher education bear out the minimal level of resource support currently given.

Second, not only are the per student costs relatively low, but the number of students who receive higher education is also relatively low. While the FSLN government expanded education at all levels, its emphasis was on the lower grades. The proportion of the age group enrolled in higher education expanded in the early eighties, but was cut back much more than any other level as the economy declined. By 1988, the enrollment ratio had dropped to 6.3%, almost 30% lower than in 1978. This is also much lower than in most comparable Latin American nations. The little information available indicates that there is an economic payoff to higher education, even in these difficult times. In sum, Nicaraguan higher education does not appear to be overexpanded nor overly costly.

Finally, it should be remembered that cutting back on higher education has significant political costs, as many countries have found out in the eighties. As this report being written (March 1991), students in Managua are strongly protesting proposed cuts in higher education that are being attached to the recent drastic devaluation package. While the Nicaraguan Constitution does not set a fixed proportion of the government budget to be spent on higher (or other levels of) education, as do some Latin American nations, it has been interpreted as requiring free higher education. In sum, for a variety

of reasons, it is unlikely that resources for primary education can or should come from higher education.

2. Current Financing Alternatives

At the present time, there are only a few sources for the additional funding needed in basic education. First, there is the possibility of inter-sectoral reallocations within the government budget. The chief candidate is defense, which in 1990 still received about 35% of the government budget, not greatly changed from previous years (data supplied by the Ministry of Finance, summing police and military together).

The second possibility is for the government to raise additional revenue. Some believe that the recent tax reform will yield increased revenues. There is also the possibility that the privatization of some state-run enterprises will yield resources for other public sector uses. Finally, some economists believe that if the economy stabilizes and begins to improve, there is room for additional taxation. As noted earlier, by 1989 the relative size of the government was about the same as in 1978. It is probably even smaller now and there could be room for expansion.

Finally, the most realistic source of immediate financial help for education (and other public sector activities) is foreign aid. Perhaps most crucial is for Nicaragua's arrears to be cleared so that the World Bank and the IMF can put together an aid package and open the road for other loans. All that is required is for these institutions and some donors to help arrange some bridging loans. After all that Nicaragua has been through and the efforts the UNO government has made in the economic sphere it is hard to understand why this has taken so long. Without such loans in the near future, combined with significant bilateral and multilateral efforts, Nicaragua's problems may worsen. Tensions from bitter years of conflict combined with the desperation of increasing poverty, create a potentially explosive situation. There appears to be a genuine and widespread desire for peaceful, democratic resolution of conflicts among all parties, but peace is a fragile proposition in the face of widespread hunger. There is a need for swift and substantial action.

E. Recommendations

The analysis presented in this chapter, in conjunction with the rest of this report, implies the need for substantial additional resources for primary and other forms of basic education. Much of these resources will have to initially come from foreign aid. As always, there is the issue of sustainability: what will happen as the aid tapers off in the future? This has been a serious problem worldwide in aid projects, where donors often built expensive pilot projects that were never affordable for the country to implement, even when desirable. However, the situation in Nicaragua is different. At the moment, nothing is sustainable beyond the present extremely low level of resources being supplied, and even that is in question as the latest devaluation forces more cutbacks.

Whether the additional resources needed now for books, schools, and teachers can eventually be sustained depends crucially on the recovery of the Nicaraguan economy, an increase in government revenue, and a reallocation of resources within the government to the education sector. While obviously it would be a great mistake to undertake projects that would be unlikely to ever be sustainable, there is no choice but to put in significant additional resources now to ensure the survival of a viable primary education system. Whether these higher resource levels are sustainable will be unclear for some time.

1. Improving Primary Education

For primary education, what might be called a basic needs strategy should predominate. Concretely, this means emphasizing (although not necessarily in this order) physical plant, books, teacher training and salary improvement, food programs for students, and the management capacity to handle these necessities. Perhaps most urgent, given the nutritional picture shown in Chapter X, are food programs. Teacher salary enhancement, linked to certification and professional development activities is a viable option for improving performance and retaining teachers. As discussed above, this is required to keep a motivated teaching force and better pre-service and in-service training is required to make them more effective (see Chapter VIII). The USAID textbook donation program filled an urgent gap, but two years from now most of those books will be unavailable or unusable. Therefore, work must begin immediately on developing a local, sustainable textbook production program.

As discussed throughout this report, the physical plant conditions are deplorable, reflecting years of neglect. Major school construction, reconstruction, and repair programs are needed. Basic school equipment is lacking. The Minister of Education said on television recently (March 21, 1991) that it is estimated that as many as half the primary school population do not have desks. The assessment findings indicate that many schools are being held in private homes under very poor learning conditions.

Finally, it should be noted that little of the above is implementable, let alone sustainable, without improvements in management capacity (see Chapter V). While this does not have to be very costly, additional resources are necessary to carry out normal field activities. One of the reasons that Nicaragua, and other countries, develop what might be called "introverted" management systems, is that there is rarely sufficient money for staff to do what they were hired to -- e.g., train and supervise teachers, start and monitor projects, gather information from the field, etc. They therefore end up managing each other. To make them more productive requires reorganization and training, but also sufficient resources to do their jobs.

2. Improving Adult and Pre-Primary Education

In the first half of the eighties, focused and significant attention was paid to adult education. Nicaragua became a showcase in this area, as a result of the literacy crusade. Although accomplishments were probably exaggerated, remarkable changes were achieved. However, as discussed in Chapter IX, the conditions during the last half of the

eighties affected these gains significantly. There is evidence of a serious loss of past literacy gains to the point where Nicaragua may be heading to levels of illiteracy even higher than before the crusade. This is fed by the very low rate of primary school completion, the decreasing level of resources devoted to adult education by the government, and the associated decline in enrollments.

The benefits of adult literacy are well documented in the international literature. In Nicaragua, evidence from the 1985 national household survey and the 1989 Managua household survey by the National Institute of Statistics and Census (INEC) support this: literate people have better jobs, income, and living conditions than illiterates. To stop the slide back to illiteracy will take resources. Perhaps foremost, is the need to compensate adult education teachers in some way. In today's economy it is impossible to rely strictly on volunteers and expect to meet existing needs.

It should also not be out of the question to consider some sort of literacy campaign, or mini-campaign, strategy. Politically, an acknowledgement of the good part of the past can help heal wounds, educationally it could mobilize revitalization in parts of the system, and economically, proper design and a high degree of voluntarism could keep costs low.

Finally, it is imperative to pay attention to what has become a focal point of international adult education policy discussions: the post-literacy environment. Besides young people never becoming literate, the biggest source of illiteracy growth are people who learn to read and write, yet never have occasion to use these skills. Strategies in this area involve newspaper production for newly literates, agricultural extension materials, health materials, and so forth.

Although pre-primary schooling is not part of the scope of work of this assessment, it is worth saying a few words about this area since it is increasingly an essential part of basic education. Preschool education was strongly supported in the Education for All declaration and there is increasing evidence of its applicability and cost-effectiveness in developing countries (Myers, 1990). In Nicaragua, considerable progress has been made, from its beginnings in the early eighties to an enrollment of almost one-fifth of the age group. While there is no effectiveness information (for this or any level of the education system), it is clear that parents value its child-minding and educational functions. In this time of extremely tight budgets, pre-school programs could be easy targets for budget cuts. It is recommended that this not be done, and expansion be considered, along with studies for improvement, as soon as feasible. It should be noted that there is a relatively small percentage of the budget allocated to pre-school and even program elimination would not free up significant amounts of resources.

3. Non-Project Assistance

Although defining the mechanisms for implementing some of the recommendations above needs to be subjected to more careful consideration and study, non-project assistance could play a very significant role. This might be especially true for

teacher incentives and school repair (and perhaps even construction). These areas do not necessarily require any technical assistance, are quite well defined, and thus easily visible.

4. Policy Information and Analysis Capabilities

Chapter VI focuses on MIS system issues and makes a number of recommendations in that regard. It should simply be noted here that there is room for improvement. There are useful data available that are never aggregated into useful information. There are also a number of studies which the MED could carry out, mentioned in other chapters, that could be very helpful to policy-making. These include: the extent and causes of student repetition; the impact of textbook fees and other costs on school attendance; and, the number of incomplete primary schools and of multigrade classrooms and the problems caused by each.

Studies such as those above, improved MIS and policy analysis capabilities, and other similar improvements are essential to the long-run operation of the MED. Nonetheless, in concluding this chapter it should be emphasized that the information here and in other chapters makes it clear that the dearth of basic resources is the biggest problem being faced and should be the highest priority. While some targeted information-gathering may be necessary for any of the "back-to-basic" areas highlighted earlier, MIS and policy analysis improvements must take a back seat (this does not mean zero funding, of course) to serious efforts to improve the provision of the most basic of resources: food, teachers, books, and schools.

V. MED ADMINISTRATION

This Chapter examines the administration and management of the Nicaraguan Ministry of Education (MED), and those factors which influence its efficiency, effectiveness, and the possibility for its reform. The manner in which authority, labor, and tasks are organized and arranged in the MED is analyzed.

Confused and contradictory legal foundations impede reform, regulation, and clear lines of authority for the MED, and the central MED structure obstructs appropriate integration and coordination of activities across functional units. Key MED processes, organizational operations, and management tools are out of date and ill defined. In part, these problems are due to the fact that MED middle managers lack training, education, and experience to effectively direct structural and operational reform. Furthermore, the MED has deconcentrated authority in the areas of staffing, discretionary spending, and materials distribution as a basis to decentralize. However, local political organization does not allow for a democratic decentralization at this time.

It is recommended that a policy dialogue be initiated about the review, codification, and integration of existing legislation such as the Civil Service, Labor, and Education laws and require as a condition precedent to any project the implementation of the "Ley de Carrera Docente," recently passed by the Assembly and the development of working groups for needed bills, regulations, and codification.

A two phased plan is recommended to improve communication, collaboration, operations, and evaluation in MED. The first phases consists of the design and implementation of a Management by Objectives System (MBO) to be followed by the second phase consisting of the design and implementation of Performance Monitoring. This will facilitate in-country management training and staff development and encourage professionalization of the educational administration function.

In addition, a decentralization and staffing study should be done to explore the possible elimination of regional duplication of function and work towards departmental or municipal level governance for the MED.

A. Introduction

Administration is especially important when resources are scarce, anticipated investment is slight, and needs are great. Accordingly, MED administration is a key area to examine for any anticipated reform of the Nicaraguan education System at the primary level for at least two reasons:

Organizational Efficiency and Effectiveness. The success of educational interventions whether measured on the dimension of effectiveness (the achievement of project ends) or cost effectiveness (the relation of achievement to cost), is affected by the quality of administration. It is short sighted to invest in new materials, innovative delivery systems, improved teacher training, and the like, if the present MED administrative system cannot support them. If the MED does not have the capability to help in the design of projects, oversee their

implementation, or evaluate them and profit from the evaluation, investment in educational improvements may be either lost entirely, or have relatively little impact as an inefficient administrative system expends most of the resources dedicated to substantive improvement;

Sustained Effort. The ability of the MED to sustain interventions project efforts after donor assistance has ended is directly related to administrative improvement and the design of organizational arrangements. The capacity required to carry on projects and programs must be institutionalized by the administration of the MED. If the MED administration operates poorly it will not be able to sustain projects.

B. Physical Setting of the Ministry of Education

1. Central MED

The Central MED is located in a former apartment complex. Though the space was not designed for government offices, it has some advantages. On the one hand, it is a comfortable environment. Most offices are roomy and well furnished. Bathrooms are numerous and there is plenty of running water as befits a dwelling. Also, the internal phones work well, and each office is air conditioned. On the other hand, the building itself has been neglected: the signs indicating Ministry of Education offices are in need of repair; the entire building is in need of painting; and there are some offices (apartments) that are boarded up due to damage or disrepair.

The attempt to fit office operations to a two-story building originally designed for housing also has some disadvantages. The spatial distribution of offices makes for difficult access. There are considerable distances to walk and stairs to climb between offices. This discourages internal communication and participation of the disabled or ill. The absence of elevators makes the delivery of equipment difficult to second stories. It is difficult to locate offices in the Central MED, because the departments are distributed among ten separate buildings.

The dispersion of offices also affects unit supervision and cohesion. Each module has space for only ten offices. Units of the same bureau, or department may be located in different modules. This results in confusion in locating offices, even for those in the same organizational unit. Even intra-unit contact becomes difficult, making the coordination of work within organizational units and communication across them problematic.

In order to facilitate communication and coordination of work, doors have been cut in the walls separating apartments in some modules. In these modules, one may walk from one end of the ground floor to the other without having to exit each office to the outside and reenter through another door. This saves time and may allow for a smoother flow of work. However, in practice, it also means that those using these routes will pass through private offices. In consequence, meetings and conversations are interrupted as functionaries pass through.

There is no secure, weather proof, designed, storage space for records at the MED. Records are kept on office shelves or stuck away in closets. Rats and cockroaches eat them. There is no warehouse space. Suitable space for archives or storage of materials is not available.

2. Intermediate Levels

Like the Central MED, the Regional and Municipal Offices are usually to be found in structures adapted to this use, rather than designed as offices. For example, in *Rivas*, a private home had been expropriated by the previous government for use as a Municipal Office. This provided a site with sufficient space. However, in most cases, the Regional Offices lack space and furniture for all personnel; usually there is room and support for the Delegate and the Administrator. Most Regional Offices are in need of repair and of painting, and, like Central MED, they lack storage space. Most have electricity, phones, and running water. The Municipal Offices are similar, but worse off. On the whole, they have even less space and equipment.

One problem that affects Regional and Municipal Offices, and especially schools is vandalism and petty theft. When improvements are made they are vandalized. For example, when light bulbs are put in a school with electricity, the bulbs may be stolen or broken almost immediately. In virtually all schools, the security system of night watchmen that is used at Central MED is not available.

C. Organizational Environment of the Ministry of Education

1. Legal Environment

As discussed in Chapter III, the constitution establishes the functions of the MED. These functions include the supervision, regulation, and inspection of public education, and the preservation of both academic freedom, and the rights of parents and teachers to exercise choice in the education of the students. In addition, the MED oversees the technical adequacy of teaching at private schools, supervises the training of teaching and administrative personnel, administers a scholarship system, certifies the granting of professional degrees, and approves degrees granted abroad.

As explained in Chapter III, a single law or decree does not cover all aspects of MED organization or function. Several laws including the *Ley Orgánica del Ministerio de Educación*, of 1982, which deals with the powers of the Minister and Vice Ministers, continues to be followed in those areas which are not directly covered or contradicted by more recent legislation. For example, the 1982 law provides for the naming of the Minister and Vice Ministers by the Executive. It does not, however, clearly define the relationship among these individuals nor their functions other than giving the Minister the power to set internal procedures and to regulate education. Similarly, the *Reglamento de Educación Primaria*, issued as an accord of the MED in 1984, continues to be followed for setting up the structure of primary schools. Exhibit 3 shows the important laws which set up MED administrative governance and summarizes their impacts.

Figure 3: Formal Rules Governing MED Organizations

Name	Promulgated by	Approved by	Year	Status	Provisions
Ley Organica del Ministerio de Educación	Legislature	Legislature	1982	Passed and published in Gaceta	<ul style="list-style-type: none"> • Sets powers of and naming by Executive Branch of Minister & Vice Ministers • Sets up Ministry aims
Reglamento de Educación Primaria	MED Leadership (Minister)	Executive Power (President)	1984	Adopted and published in Gaceta	<ul style="list-style-type: none"> • Sets up structure of primary school categories • Sets up qualifications for primary school personnel
Ley de Carrera Docente	Legislature	Legislature, then needs Internal MED Regulations	1990	Adopted and published in Gaceta; not in effect until regulations adopted	<ul style="list-style-type: none"> • Supersedes internal regulations passed by MED (where in conflict) • New retirement system for teachers • Guarantees teaching positions to normal school graduates • Establishes point system for teacher qualification and pay scale • Creates new grievance procedure and bodies (Comisiones Nacionales y Departamentales de Carrera Docente) for teachers • Involves unions in grievance procedure and adoption of regulations
Ley de Servicio Civil y de la Carrera Administrativa	Legislature	Legislature	1990	Adopted and published in Gaceta; awaiting regulations to be adopted in each Ministry	<ul style="list-style-type: none"> • Sets up recruitment and selection procedures for central government agencies • Establishes human resource offices for central government agencies.
Código del Trabajo	Legislature	Legislature	1945	In full effect since 1945; passed and published in Gaceta	<ul style="list-style-type: none"> • Sets up rights and duties of employees and employers (public and private) • Governs working hours and conditions, unions, right to strike
Instructivo de la Nomenclatura Estructural del Estado	Secretary General of the Junta	Legislature (Junta)	1980	Passed and published in Gaceta; continues to be followed	<ul style="list-style-type: none"> • Sets up ministries on a Cuban model with Ministers, Vice Ministers and a Director General • Mandates names for line and staff functions in agencies of central government • Mandates reporting (relationships of agencies of central government)

2. Internal Political Environment

a. Ideology

The present MED leadership has been in office for only a year. They believe that the use of FSLN party symbols, such as the flag, in tandem with traditional National ones has resulted in a degradation of national symbols and pride in them. They are intent on continuing a program of educational reform in the Ministry which includes the development of civics and morals education. For example, the Nicaraguan National Anthem has been distributed to most of the regions for use in their classrooms. This is a direct response to the use by the FSLN of their anthem in classrooms throughout the nation. Also, a pamphlet, *Símbolos Nacionales de Nicaragua, Características y Usos*, has also been developed for use in schools.

In addition, MED is moving forward with a program to replace the previous government's textbooks. These were deemed too ideological for use in primary classrooms and have been replaced. The MED is also desirous replacing adult education texts with newly printed ones, and they have requested USAID for help in this area.

One main goal of MED continues to be the removal of FSLN ideological indoctrination that is found in educational materials. A subgoal of this effort is the provision of new materials where necessary. Another sub goal is to change the MED from an ideological institution to a technological one. This is spelled out in the Ministry's July 1990 pamphlet, *Lineamientos del Ministerio de Educación en el Nuevo Gobierno de Salvación Nacional*, which specifically directs the MED to concentrate on these areas:

- Curriculum Transformation
- Academic Freedom
- Advancement of Teachers
- Stimulation of Academic Production
- Democratization and a greater Role for Parents
- Support for Private Education
- Bilingual and Intercultural Education

b. Unions

Public sector employee unions are allowed under the *Código del Trabajo*, although they are not explicitly awarded the right to strike. All public sector employees may join unions, in fact they may belong to more than one. However, those who hold administrative positions in ministries may not hold leadership positions in the unions

The MED leadership deals with four different unions. They are politically and ideologically different, though not distinct. Following is a list and brief description of the education sector's unions:

Frente Sindicalista de Maestros Nicaraguenses (FSMN) this union is identified as a "democratic" union. This means that the group is allied with the UNO party. They represent teachers only.

Sindicato de Trabajadores Democráticos de Educación - this union is also identified as sympathetic to UNO. It is relatively new. It represents administrative and support personnel only, rather than teachers.

Federación Independiente Nacional del Trabajadores de Educación (FINTEC) - this group is felt to be more to the left and socialist than either of the preceding two. Although it is not wholly FSLN. It represents teachers and other education workers.

Asociación Nacional de Educadores Nicaraguenses (ANDEN) - this is the farthest left education union. It is considered to be a FSLN union. It is quite activist and was recently responsible for the occupation of the Municipal Delegation of MED at Estelí. It represents all education employees.

Because of multiple memberships and inflated claims, it is difficult to tell exactly how many active members each union has. However, at least ANDEN is well organized and powerful. Obviously, the political and ideological differences that were already found in MED are galvanized by the presence of the unions. Of course, this leads to further turbulence and serves as an impediment to change or reorganization in MED.

The unions have an officially sanctioned consultative role. They are explicitly recognized as full fledged participants in organizational governance by a number of new laws. Perhaps the most obvious example of this is their well defined role in the new *Ley de Carrera Docente* as members of the National and Departmental Commissions. This confers the authority in the adoption of the regulations (*Reglamento*) which will implement the law.

In order for the law to be fully applied the MED must develop and adopt a set of regulations which detail how the law will function in practice in those areas where it is not already specifically spelled out. For example, a salary schedule based on a point scoring method mandated in the law must have working procedures designed and implemented. The unions must be involved in the design and adoption of these regulations.

The salary issue has led to an impasse in the implementation of the law. ANDEN wants a salary schedule which is strictly based on points. Some of the other unions are sympathetic to this point, but the MED does not have the budget to implement this proposal. Unless this issue can be resolved, and the draft regulations adopted, the new *Ley de Carrera Docente* will be suspended and left without force until such time as an accord can be reached.

The new law is in accord with the MED leadership's desire to make teachers more professional and more like technicians. The FSLN members of ANDEN view it as

an opportunity to meet their members' salary needs. It is also in the interests of MED and the other unions to raise teachers's salaries. However, holding the Career law hostage to salary demands, only increases the power of the unions and does not improve the quality of the teaching profession.

3. Rules and Governance

Governance of the MED is made more turbulent by the rules left by the FSLN pertaining to MED structure and function. In September, 1980, the *Secretaría General de la Junta* of the *Gobierno de Reconstrucción Nacional*, promulgated the *Instructivo de la Nomenclatura Estructural del Estado*. This law based the organizational structure of government agencies and the names and functions of their units on a Cuban model. This model was not always in accord with laws passed previously that granted powers to Ministers of government agencies such as MED, and was not in conformity with existing political subdivisions of the country, as in the case where ministries were organized by geography as well as function.

The structure outlined in the Nomenclature Instruction is rigid and inflexible, leading in some cases to excessive bureaucratization, and in others to a blurring of role or function. While paying a great deal of attention to clarity in reporting relationships, specificity in function, and lines of authority, at the lower levels of the organization, it leaves the relationships at the top unclear and the authority diffuse. For example, it mandates that support units must all be called *Divisiones* and that line units (though these are defined in terms of authority as resting on the executive power, rather than by their relation to core productive technology) must all be called *Direcciones*. It also specifies, in centimeters, the size of boxes on an organization chart and that each succeeding row must be smaller than the preceding.

The impact of the Nomenclature Instruction, may be seen on the MED organization chart presented in Exhibit 4. Though the Minister is nominally in charge of MED, neither the position of Minister itself, nor those of Vice Minister appear on the current organization chart. Instead, the chart is capped by a box labeled *Dirección Superior* (executive management). Thus, the crucial document that sets up MED structure, positions, and, reporting does not clearly define the formal relationship of the Vice Ministers to the Minister. It is unclear whether the Minister is merely the strongest member of a board of directors, the *Dirección*, or a weak chief executive.

This lack of definition in role and authority of upper management promotes inefficiency in two ways. First, as interviewees have pointed out, it raises the costs of giving and taking orders. The lack of clarity in reporting relationships leaves subordinates confused about who is to give them direction, to whom they answer, and who will evaluate them. This makes them reluctant to act, and raises the cost of getting them to act. It also delays action as they try to determine which nominal superior to follow when given conflicting orders. Moreover, it increases the uncertainty of giving orders to subordinates because superiors can never be sure about the timeliness, completeness, and quality of tasks discharged, or even about the possibility of

interference from others.

Second, the room for organizational policy to be subordinated to personal or ideological agenda is widened. When formal lines of authority are lacking or unclear, the room to transform what would normally be informal agenda into formal policy is broadened. Subordinates are not necessarily loyalists of the Minister or strict advocates of the Minister's policies or programs. Also, they are not necessarily chosen on technical competence.

It is essential that policy direction be clear, and that those who are at the top of the organization carry it out. In Nicaragua where resources are scarce, it becomes even more important that this be done with a minimum amount of organizational politics. If more time is spent on the adoption and definition of policies, less time will be spent on their implementation and evaluation. Lack of clear lines of authority leads to inefficiency and action that may be important politically, but which does not further the aims of the organization and wastes resources such as time and materials.

D. Bureaucratic Structure and Processes

1. Organization of the Ministry of Education

The legal environment and the internal political environment of MED provide the context for its governance and administration. A complete analysis of the MED bureaucracy includes an examination of how the MED is organized to carry out its goals. This includes the distribution of authority and the division of labor and functional specialization seen in the structure of the MED (see Exhibit VI-2). It also includes the processes which coordinate and support the division of authority and functional specialties.

a. Structure

The MED is reasonably decentralized in its structure. This is because, like many government agencies, the MED is organized both functionally and geographically. There is a MED bureaucracy for the central ministry itself organized along functional lines. There are also regional sub units, *Delegaciones Regionales* (Regional Delegations), which are responsible for implementing ministry programs and overseeing matters at the local levels in their geographic region.

Following the Nomenclature Instruction mentioned above, these regional delegations depend on and are the minister's delegates to the regions. Functionally, the delegates report to the minister and are supported by the Central MED organization. However, with respect to the organization of the central ministry concerning power, authority, and resources, the regions are at the lowest level of ministry organization. Although they cannot be directly ordered by the rest of the ministry hierarchy, neither can they directly order other dependencies of the Ministers: they must request the support they need.

Function Levels

Figure 4: Organization of the Ministry of Education

Level 1
Executive Officer

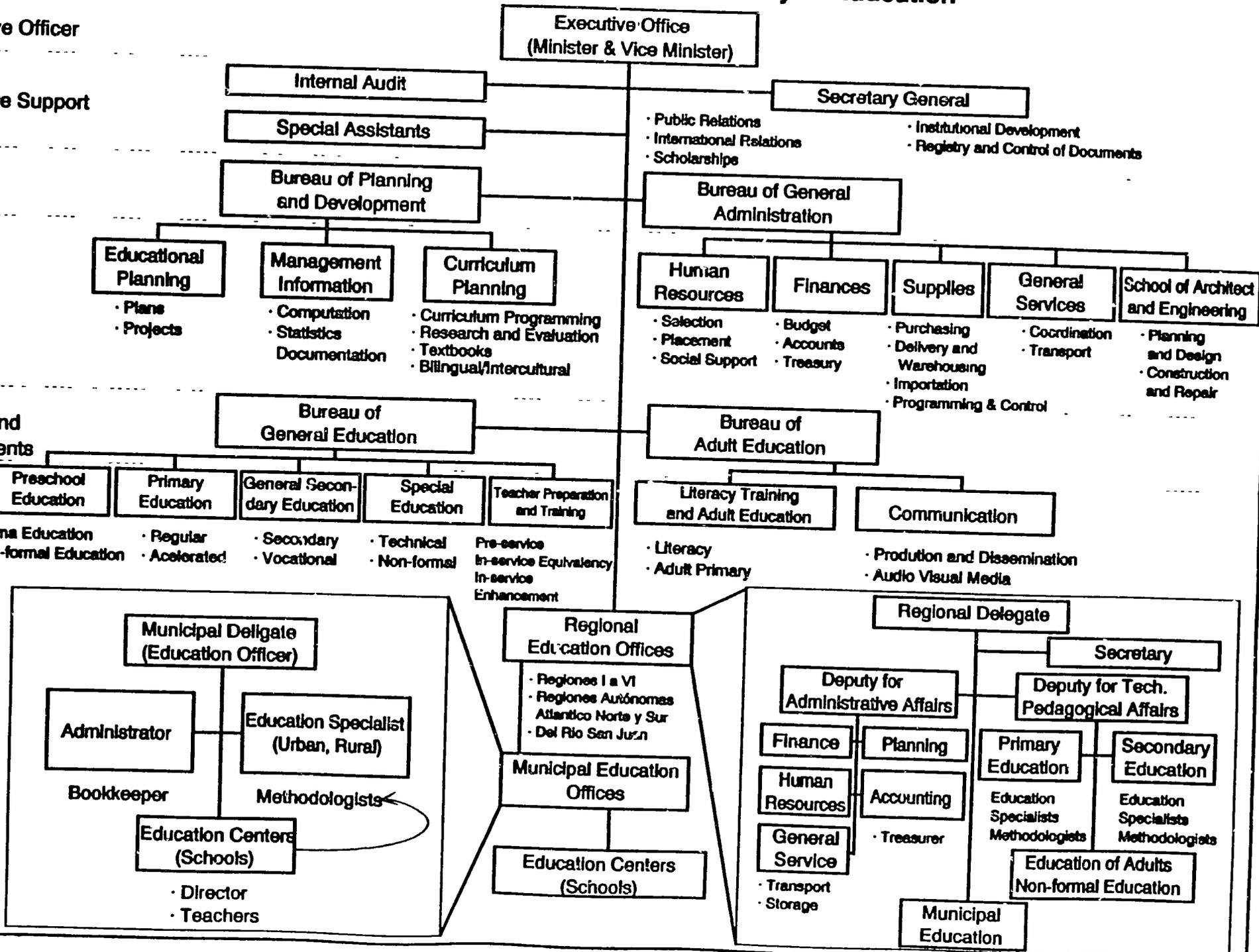
Level 2
Executive Support

Level 3
Bureaus

Level 4
Sections

Level 5
Offices and Departments

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Central MED: The central ministry has five different levels of bureaucracy, not including the regional or municipal delegations. As mentioned above, the executive management level of MED continues to have its structure influenced by the Cuban model which places the Minister and Vice Ministers together in a *Dirección Superior*. The *Secretaria General* supervises the MED's information and public relations office, international relations office, institutional development office, and a scholarships office, as well as the document registry. Given its responsibility for international contacts and institutional development, cooperation with this office is key in any efforts for improving MED performance through donor activity. Also, those efforts which attempt joint donor MED activities, or improvement of the MED image would also need to work through the *Secretaria General*.

MED Central is divided into four areas or Bureaus: Planning and Development, General Education, Adult Education, and Administration. These bureaus are also functionally organized. The Planning and Development Bureau oversees all data processing and statistics, program and project planning, curriculum planning and evaluation, and a library. The General Education Bureau has responsibility for preschool, primary, secondary, and special education. It also has charge of teacher training and education. The Adult Education Bureau is responsible for literacy among the adult population. The Administration Bureau is responsible for budgeting, payments, and logistics support.

Intermediate Levels: There are three intermediate levels of organization below the Central MED. The first level below the *Sede Central* (Central MED) is the *Delegación Regional* (Regional Office), headed by the *Delegado Regional* (Regional Delegate), who is the direct representative of and named by the Minister of Education. The second level is the Municipal Office, headed by the *Delegado Municipal* (Municipal Delegate), who is named by the Regional Delegate. The third level is the local school or *Centro Educativo* which is headed by a *Director* or *Principal*. All these positions are *puestos de confianza* or exempt positions which derive their authority in a direct line from the Minister who names the regional Delegate.

The intermediate levels are organized much like mini ministries, especially the Regional Offices. The major difference is that as one moves lower down the intermediate levels to the school, there is more structure for teacher supervision and less administrative capacity. However, as will be noted from the following, the organizational pattern is one duplication and redundancy of function: Regional Offices are like the Central MED, and the Municipal Offices are structured like the Regional ones.

As with the Central MED, the Regional offices are organized both functionally and geographically. The geographic sub division of the Regional Offices is the *Delegación Municipal* or Municipal Education Office. Like the Central MED, they too are organized by function and geography. The geographic sub divisions of the Municipal Education Offices are *Centros Educativos* (Schools).

b. Staffing

In total, the MED is staffed by about 31,000 people. These include approximately 24,000 teaching positions, 1,900 technical positions, 2,500 support positions, and 2,400 administrative and supervisory positions. One goal of the Central MED is to cut non teaching positions by 2,200 or about 7% in 1991. Clearly, the MED is not top heavy with administrators (about 7.7%), although a few could be cut depending on actual functions. However, technical support people, such as Educational Specialists, also discharge some supervisory functions. These functions might be better discharged by Administrators or officially moved from Administrators to the support staff. Support personnel, for example, a Kitchen Director, also complete some administrative functions.

As the following table illustrates females are well represented in the leadership of Central MED at all levels. However, they are under represented in the regional delegations (see Appendix V-1). Although the Minister is male, the one Vice Minister (the other position being vacant) is female.

Table 19: Distribution of MED Personnel by Function/Gender

FUNCTION MINISTRY UNIT	ADMINISTRATION				TECHNICAL				SUPPORT				TOTAL			
	MALE		FEMALE		MALE		FEMALE		MALE		FEMALE		MALE		FEMALE	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Executive Management	3	0.5	1	0.2	6	0.3	0	0.0	8	1.2	17	2.6	17	2.6	18	2.8
Executive Staff	4	0.5	1	0.2	6	0.9	14	2.2	6	0.9	13	1.9	16	2.3	28	4.3
Planning Bureau	1	0.2	7	1.0	21	3.2	42	6.4	5	0.7	23	3.5	27	4.1	72	10.9
Admin. Bureau	10	1.5	9	1.4	30	4.6	53	8.1	109	16.8	80	12.3	149	22.9	142	21.8
Bureau of General Education	6	0.9	8	1.2	25	3.9	54	8.3	10	1.5	41	6.3	41	6.3	103	15.8
Bureau of Adult Education	3	0.5	5	0.7	7	1.1	13	2.0	3	0.5	10	1.5	13	2.1	28	4.2
TOTAL	27	4.1	31	4.7	95	14.6	176	27	141	21.6	188	28.1	263	40.3	391	59.8

Because the award of positions is formula driven, the distribution of posts by region is equitable. The Central MED has about 750 employees with the Administrative Bureau accounting for about 300 of them, Adult Education about 100, and the Planning

Bureau and the General Education Bureau about 150 each. The rest are distributed among the Minister's advisors, the General Secretary, and their staffs.

The ratio of teachers to administrators in the entire system is about 10 to 1. Perhaps because of transportation problems, and the difficulty in traveling, the highest ratio of teachers to administrative staff is to be found in the Special Zone and the Southern Autonomous Region: *Rio San Juan* has 4.28 teachers for each administrator; the Atlantic regions, South and North, have 3.85 and 9.29, respectively (see Table 20). This may be compared to Region III, *Managua*, which has the greatest number of total personnel, and 9.89 teachers to 1 administrator, or Region I at 16 to 1. There are about 2,350 designated administrative positions at the Regional and Municipal offices. In total, there are about 6,150 non teaching positions at the Regional and Municipal Offices, of these, about 38.2% are administrative, 26.1% are technical, and another 28% are support positions.

Table 20: Number and Percent of Personnel Types by Region

PERSONNEL	REGIONS						RAA N	RAA S	ZE-3	ME D	TOTAL
	I	II	III	IV	V	VI					
Supervisor	249 6.2%	447 8.33%	616 7.9%	442 7.6%	235 8.6%	180 5.9%	94 8.7%	57 16.3 %	28 9.9%	57 7.6 %	2,405 7.7%
Technical	171 4.3%	539 10.1%	319 4.1%	213 3.7%	102 3.7%	140 4.6%	53 4.9%	43 12.3 %	25 8.8%	271 36 %	1,876 6.0%
Support	250 6.3%	348 6.5%	749 9.6%	406 7.0%	184 6.7%	131 4.3%	60 5.5%	38 10.9 %	30 10.6 %	325 43 %	2,521 8.0%
Teaching	3,269 82.5%	4,026 75%	6,097 78.4%	4,776 82%	2,205 80.9%	2,668 85.3%	873 80.1%	220 62.9%	120 4.2%	0	24,231 77.6%
TOTAL	3,996	5,360	7,781	5,837	2,726	3,069	1,080	350	283	751	31,233

2. Operations of the Ministry of Education

a. Personnel

At the Central MED, the personnel process consists of three steps. First, personnel are recruited for all positions on a national level, that is anyone may apply for a position in the Central MED. Second, personnel are hired temporarily for periods of two or three months (depending on the type of position), and then given an initial evaluation. Third, they are either converted to permanent employees, are rehired again on contract, or they are discharged.

Recruitment and selection of teachers and staff is the responsibility of the regional and municipal education offices. Very little recruitment is done, because these offices generally have a surplus of candidates. Interviewees stated that candidates were selected on a first come first served basis if they met the criteria of a willingness to complete their normal school education while teaching, if it had not been completed.

Recruitment: The employment process begins with the creation of an *expediente*, or file. Aspirants create a file by filling out a general application, rather than applying for particular positions. Most of the information needed for a modern personnel record system is requested from applicants. When they have delivered this information, the file is opened.

Beginning in August of 1989, with the arrival of a new Chief of Recruitment, the Central MED also began a process of *Entrevista Preliminar*, or pre-employment interviews. Before the file is sent to the resource base, the applicant is interviewed, and graded on specific behavior (intelligence, calmness, modesty), and general personal aspects (physical appearance, personality, self expression). A rating sheet is filled out by the interviewer, usually the Chief of Recruitment.

Applicant and Employee Records: Once recruitment is completed, the file enters a set of files called the human resource bank. These are the files of all applicants for jobs with the Ministry. There are actually two distinct sets of files. First are those of all applicants for jobs from outside the MED. Second, there is a special group of files for those people suggested as possible advisors or job candidates by the Minister or the Vice Minister. These are given preference.

The applicant files themselves are in disarray. They are not kept in cabinets, but on shelves, and many are incomplete. Moreover they are filed alphabetically by year of application, rather than alphabetically, or alphabetically by type of work desired or qualifications. In consequence, if one does not know the year in which a candidate applied, it is quite difficult to find the desired file. Also, it is next to impossible to look for candidates by type of specialty required or qualifications. In addition, the incidence of misfiling is increased by the system: files are often filed in the correct alphabetical order, but in the wrong year.

Selection: When an entry level position is vacant or when the supervisor of a unit does not have anyone qualified to promote, candidates are selected from the resource bank. In addition, others, not already in the resource bank, will be suggested to the supervisor by friends in the MED and urged to apply. Usually, three of these candidates are interviewed and one is selected.

The candidate selected will be issued a temporary contract. If the position is administrative (e.g. accounting, clerical), the incumbent will be issued a two-month contract. If the position is a service one (e.g. motorists, janitors), then a three-month contract is granted.

At present there is a freeze on hiring. Consequently, most new employees have been working on a series of two- or three- month contracts. The freeze on hiring is implemented by the Ministry of Finance which releases each authorized position to MED and issues checks for them. In cases where it is deemed urgent to hire someone, the Minister of Education or a representative can make a request for permission to hire from the Ministry of Finance. Thus, the hiring freeze is not absolute and irrevocable, but permission to hire must come from outside the MED itself.

Performance Evaluation: At the end of the temporary contract an evaluation is conducted of the incumbent's work performance during the trial period. This evaluation is conducted by the incumbent's immediate superior using a form developed by the recruitment office of the Human Resource Section. On this form a mix of traits (honesty, responsibility, cooperation and initiative) and characteristics (attendance and punctuality, quality of work) are rated from excellent to normal. There is no attempt to link these to behaviors. After this rating, the rater is asked if the employee should be confirmed in the job as a permanent employee, have the period of work extended (i.e. issued another contract), or be let go from the job.

In most cases this initial evaluation during the probationary period is the only evaluation conducted of employees. The MED does not have a performance evaluation system, performance evaluation manual, or forms for personnel evaluation. Evaluation is done informally by certain supervisors, but is not conducted as a formal institutional process. Many employees who began before the advent of the probationary evaluation process in August 1990, have never been evaluated.

Teachers are not evaluated in any systematic way. When the Education Specialists provide pedagogical assistance they may also gather attendance data for teachers. This is the only information related to teacher performance that is collected. This information is not used systematically for evaluation purposes.

Discipline: The discipline process is handled by *Prestaciones Sociales*. While there appear to be several manuals for discipline in the office, they are not applied. There are no copies available for either employees or managers. Firings are basically at will, although the *Código de Trabajo* governs these and the discipline process is also based on it. However, due to the fact that the knowledge of the process is not disseminated, most MED employees do not exercise any rights that they might have. Moreover, unlike teaching personnel, the employees of the MED are not all members of unions which can educate and represent them.

Payroll: The majority of the time and effort of the Human Resources Department is spent on accounting for assigned positions and getting people paid. The *Oficina de Nómina* (Payroll Office) has this responsibility. It has one third (12) of the employees of the Human resources office.

Payroll is part of the Human Resource Office, rather than Accounting, because it does not have any actual financial function. Payroll data and the actual payroll are

compiled by a computer program at the Ministry of Finance. Checks are also issued there.

However, preparation of the payroll data for the Ministry of Finance, serves the function of position control for the MED. Data on hiring, separation from service (whether discharge or retirement), and transfer for all teaching, administrative, or support employees of MED is collected and compiled at the MED Payroll office. There are three basic payroll actions:

- Naming** (adding to the payroll, or to an additional position),
- Movement** (moving a person from one area or program to another)
- Cancellation** (removing someone from the payroll).

Each action is triggered by a request from the Regional Office and each has its own form to be completed in the Central MED. These forms record pertinent data for the transaction (e.g. from what program to what program) in blocks which can be used for keypunching by data entry clerks.

Preparation of the payroll is a laborious, time consuming, manual process. As noted above, its main function in MED is position control. It is supposed to allow the MED to keep track of vacancies and to fill them when appropriate. It is also supposed to allow the MED to track the movement of the work force.

As designed, it cannot carry out these functions very well. It is cumbersome and slow. Because everything is entered manually, and because it all must be sent to the Ministry of Finance which must then process it, considerable time passes between actual changes and changes in information. For example, it may take someone three months or more to be added to the payroll. The system does not operate in real time. This allows for the possibility of exceeding limits on positions.

In actuality, positions are not controlled by MED, they are only filled. If more candidates are submitted than have been budgeted for at the central level, the division of human resources eliminates unfunded new positions by reviewing the qualifications of each new teacher whose name is submitted. However, the criteria for elimination is unclear.

Payroll cannot effectively check for fraud in the system. The MED allows someone to hold more than one position (e.g. day and night teaching). This fact is recognized by a report that the Ministry of Finance puts out which lists those with multiple positions. Little attempt is made to control or check on how many of these someone holds, or whether they are completing the work.

Furthermore, fraud also may be allowed by two curiosities of the naming system. First, no checks are made to verify the existence of people named to the payroll. In other countries this has led to the creation of "shadow" employees. Second, because the system is so slow in paying people named to the payroll, a special fund exists for paying them at the Regional Offices. Those who do not receive their checks in the regular

payroll run are paid by checks issued from of this special fund. Since this fund escapes all other controls, the possibility for misuse is obvious.

b. Supply

Material Resources at the MED are managed by the Department of *Abastecimiento Técnico Material* (Technical Materials Supply) or ATM. This department purchases, stores, and distributes needed supplies. To support these activities, the ATM Department is divided into four offices: purchasing, warehousing and distribution, imports, and control.

This system looks good on paper, but does not function well in practice. The operating system for acquisition, control and distribution of supplies is not well developed. Moreover, the types of data needed for management decisions are completely missing. Interviews with ATM and Regional Office personnel and a 1990 report prepared by a consultant to UNICEF give evidence of the following problems.

Inventory control is lacking. The Office of Control was created to help identify materials needed and supplies on hand. However, it has not fulfilled this responsibility. Materials are still identified and controlled by Goods Control in the Finance Department. This system is for the purpose of financial management rather than for inventory control and ordering. Because materials are not identified by use codes, but by codes pertinent to financial categories, Regional Offices are never sure what they are ordering from the catalog, and the ATM does not have an accurate picture of supplies on hand.

ATM does not conduct regular inspections of Regional and Municipal Office warehouses and equipment which further aggravates the inventory problems. The ATM Purchasing Office makes materials and equipment purchases for the entire nation, accepting bids, and completing the contracting and payment. This is done without adequate inventory control, as noted above, and without inspection of warehouses. In consequence, the purchases programmed do not necessarily meet real needs, but instead only real requests.

Storage is an additional problem. Many Regional and Municipal Offices lack sufficient warehouse space and management. Even if warehouse space is available, in many instances it is not suitable: it is not secure, or it is not well protected from the elements. In most cases, access to warehouses is not controlled, and it is difficult to tell who has had access to materials. In addition, there are no technical manuals available for materials management which detail how to store and organize materials. These problems have several effects:

Materials are not distributed in an orderly manner. In concept, the distribution system mirrors the MED hierarchy. MED Central receives requests from and distributes materials to Regional Offices, which receive requests from and distribute to Municipal Offices which, in turn, receive requests from and distribute to Schools. In reality, ATM receives and fills some requests directly from schools

and Municipal Offices, without prior approval.

The cost of supplies are inflated. According to the UNICEF report, at least 15% of the supply budget must go for unforeseen expenses. In part this is due to the poor inventory system. It is also due to the poor system of warehousing and loss control. Better inventory control would allow for purchases to be made when they were needed or when prices were favorable. It would also allow the MED to take full advantage of economies of scale by using most of its supply budget as leverage, instead of reserving a part for unseen purchases.

c. Financial Management and Budgeting

Like most other developing countries, budgeting in Nicaraguan government is highly centralized. Most agency budget planning and financial control is done or overseen by the Ministry of Finance. In this respect, the MED is no different.

About 90% of the MED budget is expended for salaries and contract employment. Of the remaining 10% approximately 8% is expended for fixed costs such as fuel, electricity, or water. Obviously, this leaves only a small fraction of the budget to spend on new programs, and most of this goes for materials.

Little budget planning or financial management is actually conducted at MED. As noted above, payroll does not belong in the Financial Section. There are no incentives to sound financial control or efficient operations because any program savings are not turned back to those who generate the savings. Accordingly, there is little information produced that would be helpful in financial management. No information is compiled or made available on spending by region or municipality, per capita expenditure for students, or program efficiency. Nor is the budgeting system tied to growth projections in schools.

Financial management and budgeting at the MED consist of after-the-fact financial control. The emphasis is not on projecting budgets and moving resources to support efficient programs. Instead, the emphasis is on after-the-fact justification of expenses and charging them to the appropriate program. MED financial management consists of two basic processes:

Bookkeeping. This takes up the majority of the time and effort of the accounting office. Payroll checks are issued directly by the Ministry of Finance. So the Accounting Office is concerned with the presentation of receipts and claims for reimbursement to the Ministry of Finance for fixed cost expenses such as those mentioned above. Without these, the MED's bills will not be paid. This office also checks internal MED claims for reimbursement and issues per diem for training and travel. All internal disbursements of the MED are made by the Treasurer's Office. These include reimbursements and per diem. Petty cash is also kept in this office.

Program budgeting. MED budgeting is largely a process carried out for the Ministry of Finance. Budget documents or requests, are prepared by the Budget Office of MED, and passed to the Ministry of Finance. These are reviewed by the Ministry of Finance and then are included in a budget package to be sent to the Assembly. After action upon this budget, the actual distribution of funds to the Ministries may vary. Moreover, in times of crisis, the Ministry of Finance has the authority to freeze budgets, or hiring, as they have done recently.

The actual outcome of the budgeting process is a percentage increase over the previous year's budget. The resulting budget is then internally distributed by MED across programs. A program budget is kept for MED by the Ministry of Finance and reports are sent monthly to the Budget Office of MED. This does not imply that MED may shift money between programs. On the contrary, as noted above, MED does not have internal control over its budget with the exception of about 2%, most of which is already encumbered.

d. Planning and Evaluation

In MED, the Planning Bureau has responsibility for producing an annual plan and evaluation. This process is divorced from budget requests. The Educational Planning section takes lead responsibility for the development and production of this plan. In concept, a four step, bottom up, rational model is followed but this model falls short of describing actual practice.

In practice, the planning process is actually top down. Goals are dictated from the Central MED. Moreover, the accomplishment of these goals is not evaluated. The plans are prepared in three steps:

1. Enrollment estimates are sent up from the regions to the Central MED. The statistical units at the Regional Offices collect enrollment data from the municipalities, which have in turn collected it from the schools. They use these actual enrollment figures to prepare enrollment projections which are based on the actual enrollment and the previous year's enrollment, and are inflated by using a growth factor provided by the Ministry of Planning.
2. Following guidelines issued by the Executive Management of MED, the Planning Bureau disseminates its tentative plans to the Regions. In these are presented the enrollment goals and projections for the coming year. The rest of the tentative plan is a statement of policies, goals, and program activities. These are generally stated and do not include measures.
3. The Regional and Municipal Offices prepare plans based upon the MED tentative plan. These follow the MED plan in aim and style. They are vaguely worded with no objective, quantitative measures of success beside the enrollment projections. These plans are sent to the Planning Bureau for approval. After they are approved, the Planning Bureau reissues its plan as a final document.

Given the nature of the plans themselves, vague, unspecific guidelines, without measures, and without the assignment of fixed times and responsibility, actual evaluation of accomplishment is difficult. The Planning Bureau puts out a mid-year evaluation which shows the extent to which projected enrollment is met by actual enrollment. However, these are often delayed, lack quantitative data, and are not consistent. Often, the categories or figures used to measure accomplishment in enrollment for an evaluation are not the same ones used in the plan itself. Like the plan, the final evaluation is vague and unspecific. It does not provide measures of how well goals are being accomplished.

The plans themselves are not only vague, but also unwieldy. They contain far too many goals and objectives to track well, even if they were measurable. For example, the *Plan Nacional del MED para 1991* has over 97 goals, guidelines, objectives, and program activities.

The lack of relevance of these plans to day to day operation may be illustrated by an example. A Municipal Delegate to a city of Region III that was visited by the assessment team, keeps his MED and Regional Annual Plan, locked in a file cabinet with important documents. It is rarely taken out. His administrator, who is responsible for day to operations, does not have access to this cabinet because the Delegate has the only key. When the Delegate is absent the plan is unavailable.

Another weakness of the planning process at MED is that it is divorced from budgeting and administration. Planning is a separate bureau. Plans are not taken into account in preparing budgets, and resources are not taken into account when preparing plans. This means that planned projects do not have administrative control nor do they have funds to implement them. It also means that budget projections are made without information about system demand or system maintenance and improvement needs.

3. Processes of the Ministry of Education

a. Communication

Written communication is not widely used organizationally. There are a few documents published each year which help to inform MED employees about MED aims. Among these are the annual plans and documents from the Minister's office such as the *Lineamientos* mentioned above. There is no organizational newsletter or similar house periodical for publishing news, events, and notices. Simple devices like bulletin boards for the posting of written notices are scarce, and circulars or new regulations are not widely distributed. This is true of communication within Central MED, of Central MED communication with the intermediate levels and among the levels themselves.

Informal, verbal communication is the norm at MED, even for official organizational transactions. As noted above, telephones work and so they are relied upon. While this has the advantage of speed, it often sacrifices clarity, and the possibility of a record. One opportunity for formal organizational communication, the staff meeting, is not widely used in the MED.

These factors and the structure of the MED mitigate against strong interpersonal communication skills and an effective system of organizational communication. The reporting relationships detailed above, also interfere with organizational communication. Each Bureau Chief reports to the Minister. Also the Regional Delegates report to the Minister while the Municipal Delegates report to Regional Delegates and in turn the Principals to the Municipal Delegates. Communication across bureaus, departments, offices, or regions and municipalities is not viewed as necessary. MED units communicate up, but rarely across the hierarchy. All of this makes for greater difficulty in coordinating interdependent work.

b. Management and Supervision

MED has not implemented the organizational processes which knit together structure and function: supervision, planning (including monitoring and evaluation), budgeting, communication, supervision, employee motivation, and coordination. It does not have a modern management environment oriented toward accomplishment. This is illustrated by MED's lack of the administrative tools to support the organizational processes noted above (see Table 21).

As the foregoing indicates, management and supervision at the MED are not strong. Even if the tools of a modern organization were available, it is not clear that they could be integrated into the organization or updated by the current management cadre. Few of those in administrative positions have any experience in management and fewer still have any formal training.

Lacking training in effective procedures, MED managers do not supervise, even informally. They do not use objective setting practices with employees or give feedback in order to let staff know about their performance. Face-to-face meetings in which supervisors set goals for employees and give them direction and appraisal are rare.

In some cases even the formal system of supervision is ad hoc. For example, the Educational Specialists at the Municipal Offices are to help teachers in the pedagogical areas rather than to serve as supervisors. However, in many cases they are the only ones who see all the teachers and can ascertain whether they are coming to work, and what is the quality of their instruction. Thus, it falls to these Education Specialists to act as a sort of supervisor by default. Unfortunately, this type of supervision is at best corrective, and at worst punitive.

MED managers are unprepared to manage projects. Project objectives are not set or monitored any more than are personal ones. These processes cannot be wholly separated in practice. If measurable objectives are not set for projects it is likely that they will not be set for employees, and without them performance cannot be evaluated on a personal nor on a project basis.

In only one circumstance were attempts at a system of supervision encountered.

Table 21: MED Administrative Tools

TOOL	PRESENT in PROCESS AFFECTED	
1. Job Descriptions	1984 (partial)	supervision/evaluation/ motivation
2. Performance Evaluation	no	supervision/evaluation/ motivation
3. Employee Phonebook	1987	communication
4. Staff Meetings	no (irregular)	supervision/communication
5. Unit or Project Performance Indicators	no	planning/budgeting
6. Project Budgets	no	planning/budgeting
7. Procedure Manuals	no	supervision/communication/ coordination
8. Policy Manual	1991 (partial)	communication
9. Organization Chart	yes	coordination

It might be described as a rudimentary form of Management by Objectives. In this the Director General of Administration was meeting with Department Heads in a in order to develop a series of agreements designed to improve the Bureau's organization. Notably, most of the agreements related specific actions to taken and times by which they were to be taken. The majority of agreements designated someone as responsible for accomplishment.

While this process was laudable, and a great improvement over current practice, it even be Administration group case, is missing four elements:

- Objective setting should be individual as well as group; time should be set aside for face to face interactions between the superior and the subordinate. These objectives should be agreed to by the individual rather than by a group.

- Objectives need to be set concretely, in measurable, behavioral terms, firm deadlines need to be set for every objective, and result measures need to be specified.
- Objectives need to be set for employee development and those personal strengths needed to meet work demands.
- Objectives need to be recorded on an individual basis and used as a guide for action and timely feedback.

c. Conflict Resolution

The main conflict resolved in the MED is that of a grievance resulting from disciplinary action leading to discharge. Using a form, the Social Services office is in charge of notifying employees, of their lapses such as tardiness, absenteeism, or any problem which interferes with work such as being under the influence of alcohol on the job. Social Services receives this information from the employee's superior. After three warnings that are not corrected, for example, a physician's excuse is not produced for absences, an employee may be discharged. Unfortunately there is no internal grievance process for the MED.

However, the discharged employee retains the right to appeal to the Labor Department. The Labor Department may entertain evidence that the employee did not produce for the employer, for example, the physicians's excuse, and, with or without evidence may order the employees's reinstatement. Unions are usually involved in counseling and supporting the employees. Unlike an internal grievance procedure, the adversarial nature of this process heightens conflict between labor and management, and leaves most substantive questions unresolved. This circumstance may be aggravated by the new Teaching Career Law which creates more layers of appeal for teaching employees, but leaves in place the Labor Department as the final appeal.

d. Centralization, Decentralization and Deconcentration

The MED has been undergoing a process of decentralization since 1982. Under the 1982 law *decreto* 1081, which initiated regionalization in the country, MED created the present Regional Delegations. This process has continued to the present day with the dissemination of some functions to the regions and municipalities. For example, under the planning process, it is the Regional Office which initially collects all statistics for each jurisdiction, and it is the Municipal Office which hires teachers. At present, the MED proposes to decentralize five Regional Delegations into Departmental Directorates that would have equal jurisdiction with the nation's departments.

This movement to further decentralization has some potential problems. It was initiated to better organize resources and to make the Central Ministry more responsive to local concerns. However, there is no guarantee that this will occur. Three tensions may interfere:

- There are not necessarily enough skilled human resources or enough material resources to staff and operated the Central MED and all its sub divisions.
- The central government does not want to delegate of educational policy making and continues to exert control over the offices of the MED hierarchy. If it continues to do this it will provide a countervailing tendency toward centralization by controlling finance, curriculum, or hiring and certification of teachers.
- Unless careful, attention is paid to design of organizational levels, jurisdictions, roles, responsibilities, and purposes, there will be some overlap, even if unintentional. This raises the cost of any decentralization by increasing the duplication of functions and the role and jurisdictional conflicts in delivery of educational services.

An example of how these tensions operate is provided by the current operations of the MED Regional Office. Although it was conceived as a way to deconcentrate the power of the Ministry, bring decision making closer to the local level, and maintain the connection with National policy, it has become a mini-ministry. It is structured the same way, and serves many of the same functions as the Central MED and as the Municipal Office. Unfortunately these Regional Offices were created to do much the same thing as the newly suggested Departmental Directorates. It is likely that they will encounter the same problems and have the same result in practice.

The debate in the MED is framed in terms of decentralization versus centralization. However, this confuses administrative decentralization with political decentralization. An option which the MED has not considered conceptually is deconcentration (administrative decentralization). In fact, this is the option at which the MED has been successful. It is also a precursor step to actual political decentralization of the MED because it allows the MED to be strengthened during the process. The distinction is outlined below:

Decentralization refers to putting control in local hands in the way that autonomous school districts are set up in the United States. Decentralization establishes community control, or at least extensive influence over educational decision making at the local level. Also, with a decentralized system, the community generates most of its own resources for education and decides how to expend them.

Deconcentration is more of a change in organizational arrangements. It shifts traditionally central functions, decision-making authority and resources from the Ministry down the hierarchy to regional and local levels. Through deconcentration the community can participate in important decision making by influencing the use of the Ministry's resources and not using its own. It should be noted that Nicaragua's system is already highly deconcentrated. Teacher hiring is done at the

local level, and books and other materials, such as there is financing for, are also maintained at the Regional and Municipal levels.

E. Summary Findings

1. A number of legal changes in the general way that government is organized have been left behind by the FSLN which were overlaid onto previous Somoza and Junta legal structures. In addition, these have been overlaid by changes made by the UNO government. Some laws which seem to be followed pre-date the present constitution. When interviewed, two legal experts in constitutional and education law, respectively, indicated that these laws were still valid where they did not conflict with other laws passed later.
2. The MED is in the middle of a struggle on the implementation of the teaching career law through the promulgation of regulations. While the law itself could be better written, it does contain the seeds of a much needed change, the professionalization of teachers through a qualifications system. However, the law does leave a great deal of room for union input in the grievance process and for unrealistic salary demands.
3. At present, those in administrative positions at Central MED, and those at the Regional and Municipal Offices are not required, either by job description or directive to have any administrative training. A few of the people who hold these positions either have experience in a related field (e.g. industrial psychology).
4. The organization chart in its present form, contains all the right elements for a modern ministry. However, they need to be reorganized. For example, the span of control for each level is narrow. Only in the *Division General de Administración* does the director general supervise more than four people. Also there is almost no formal coordination of units which have important input for each other, like planning and budgeting.
5. In the present situation in Nicaragua, further decentralization may be problematic (though deconcentration may work). Local communities are very poor and could not raise revenue. Also, many interviewees stress the possibility of system capture by FSLN elements under a decentralized system. These elements are well organized at the local level and already exert inordinate control.
6. Some components of a Human Resources Office, selection, payroll, and social services are all in operation. However, most effort is concentrated on filing records and adding names to the payroll. There are artifacts of a modern system, old job descriptions, lists of employed persons, but existing pieces are not current and others missing.
7. At present, file maintenance of the MED is performed completely by hand. The Human Resources Section keeps all records for the Central MED and for Regions

III and VII. An index system which is both incomplete and arcane provides the guide to at least 37,000 records filed in cabinets, on open shelves, and on the floor. These records are in various states of decay, some being eaten by rodents or insects. The importance of these records cannot be underestimated since they include the original documents for retirees, active and inactive teachers. At present an inactive teacher (i.e. one who has resigned or left the profession) may apply for reinstatement, and their records must be found, if requested.

8. The data collected by the Planning Bureau at the Central MED are not used in decision making and plans are never evaluated. While some statistical data are collected, they are global in nature and do not measure progress in particular programs or toward particular program or project objectives

9. The current payroll system is run by the Ministry of Finance which controls both pay and positions. Information about who is employed is sent up from the Municipal Offices to the Regional Offices who pass it on to the Central MED Payroll Department. There, information on hiring, transfers, retirements, or separation is entered by hand on reporting sheets using a system of regional codes and position identifiers. These are then sent to the Ministry of Finance each month which enters all the information and provides monthly printouts of the MED employees for record keeping and check cutting purposes. It takes anywhere from three to six months for changes to be made, or errors to be corrected. Indeed, because people may hold more than one position (e.g. adult and basic education instructor), it is difficult to tell just what is an error and what is not.

10. At present, the MED is not ready to assume the responsibilities for the execution of major projects. Organizational processes are not well developed at MED. It lacks the capabilities to effectively plan projects, monitor and evaluate their success, and control in a timely manner the material and financial resources necessary for their completion.

11. MED management and supervision is poor. The lack of elementary management tools indicates that a great deal needs to be done before the MED can effectively manage improvement of the Education system in Nicaragua. However, these tools can be developed and used in MED to improve administrative processes at the Central Ministry level.

F. Conclusions and Recommendations

1. Concluding Remarks

The MED has a rationally designed structure with most organizational functions. However, they are not carried out in practice. This is not a characteristic only of Nicaragua, but is fairly typical of the Latin American region.

This characteristic is aggravated in Nicaragua due to the social upheaval that Nicaragua has undergone. The revolution of 1979, the ensuing conflict did not allow agencies to develop. Rather, they grew through a process of accretion, with one change overlaying the next rather than replacing or reorienting organizational structure and process.

These changes have left people tentative about which direction to pursue in the long term. This is especially true of in-place bureaucrats. The natural bureaucratic tendency to goal displacement, that is losing sight of large scale aims and concentrating on narrow, means oriented procedures, is aggravated. People who feel this way become impediments to rational processes, not so much because they oppose them as because they are not sure that working to implement these policies will lead to proffered rewards. The problem is as much motivation as it is resistance.

This social upheaval has turned an already poor government into an impoverished one. Simply put, there are no resources. The MED is rife with dilemmas: Is it better for teachers to have checks which are nearly worthless until they cash them, or to cash them for currency that is virtually worthless? In order to encourage local control, should budget functions be decentralized to the local level where there is no money, or should they be continue to be centralized in the Central MED where there is almost no money? The situation of the Nicaraguan MED should not be seen as an impossible one, but it is a very difficult.

a. Strengthening MED Administration

Nevertheless, some things can and should be done. However, in a situation so difficult and filled with natural obstacles, care must be taken not only to do the right things, but to do them in the right order. For example, it would do little good to train teachers if they cannot be retained, and it would do little good to develop instructional materials, if they cannot be maintained and distributed.

An administrative infrastructure must be developed prior to nearly any other change contemplated. In practice, this means that reform of the Nicaraguan education system must be preceded by reform of the MED itself, modernization and strengthening of its administrative procedures and practices, and reorganization of the organizational structure and processes. Only with these improvements can the planned changes in system behavior both occur and be sustained.

An administrative improvement program at the Central MED is recommended which would take place in two phases. The major administrative improvement of the first phase would be a Management by Objectives (MBO) system for the MED which would make possible the design and implementation of projects to improve all of the processes mentioned above. The major administrative improvement of the second phase would be a Performance Monitoring Improvement Project that would be developed and instituted using the strengths built in phase one on the newly installed MBO system. In this phase, a Data Collection and Management Information System (MIS) and a new

fiscal system would be designed and installed as the final step in Central MED improvement and to prepare for further administrative improvements in personnel systems and logistical support improvement, and also to support eventual decentralization.

b. Input and Output Systems

Inputs to educational management systems, for example teachers, desks, or textbooks, can be expressed in monetary terms. The costs of desks and textbooks can be measured by their price, and the cost of teachers by their salaries. Systems which track inputs will always use money as their main measure. These are financial management systems.

The same is not true of the outputs of educational systems. The outputs are difficult to express in monetary terms. The value of literacy in a single case, the ability to perform simple calculations are difficult to relate to financial value, especially in a case like Nicaragua where markets are often paralyzed and shadow markets are either paralyzed or non existent.

MED administration especially needs help in improvement its management and measurement of the output side of administration. Reasonably accurate systems exist to account for system inputs and tracking them by cost, although it is also recommended that these systems be modernized and improved and more strongly and formally tied to the output systems. However, it is on the output side that the MED should begin. At present, it tracks outputs only in the aggregate, and has no quality measures at all.

It is suggested that MED eventually develop and install two types of output monitoring systems. First, in order to improve the organizational processes and strengthen the overall management and administration of MED central, an MBO system is suggested. Second, to assist in day-to-day management, decision making, and routinization of operation, planning, and evaluation, it is suggested that a Performance Management System be installed. This would provide the basis for developing nationwide output measures, evaluating progress toward organizational objectives to reach national goals and, eventually, to tying these measures to the financial management system.

While the development and implementation of such management systems do not guarantee eventual decentralization, nothing can. The effectiveness of a system-wide reform, such as decentralization, is often as much a question of political will as of management. Nevertheless, certain types of management and the organizational cultures they encourage can better support a move toward decentralization than others. The use of participatory systems such as MBO encourage the development democratic values in a management cadre. This is fertile ground for the seeds of further deconcentration and eventual decentralization. Moreover, the rational development and installation of these systems would improve the ministry's administration to the point where it could support decentralization efforts in the future without losing its sense of mission and ability to provide policy direction.

2. Specific Recommendations

a. Phased Change

It is suggested that a two-phase approach be taken to MED reform. A phased approach allows for a logic of change which builds on small successes and institutionalizes them, and overcomes resistance to change by making it an ongoing process. The two phases would encompass five steps or project areas each of which would have distinct activities. Each step is separate and distinct concerning the implementation of the changes contemplated in it. However, to preserve commitment and improve continuity, planning for changes in one step may go on in the previous phase. Following is an outline of the project phases and steps that are suggested and the types of changes that are contemplated in each:

Phase 1 - Improving Communication, Collaboration, and Project Management: Management by Objectives

Output systems can be distinguished by how goals are set and tracked. Some set goals personally in face-to-face meetings and also use meetings to track and report progress. Thus, they encourage communication, motivation, team building, coordination, and planning. These systems are especially useful in an environment where managerial outputs are changing from year to year, and where there will be a short term, project orientation. These types of systems are commonly known as MBO systems.

Step 1 - Policy Precursors

These are changes that are at the level of policy dialogue, such as legal reforms. They may necessitate changes that reach beyond the educational system and effect the entire executive branch or government. They are initiatives that are not necessarily project based and may go on concurrently with more discrete changes pointed solely at the MED. They will have legal, political, and administrative effects.

Step 2 - Improving Management of the System

This step comprehends changes which are designed to yield upper management dominance of the MED. The result is to set up a system of management and communication which will improve the chances for success of the rest of the changes by improving the MED's capacity for project management. By improving not only project administration, but also accountability and responsiveness, the changes contemplated in this step will have both political as well as administrative effects.

Step 3 - Changing the Organizational Structure

At this step, with improved management, the MED should be ready to begin projects which are part of its own reorganization. They will provide the structure on which to build further changes in processes. At this point, the structure should

be rationalized in order to provide the maximum flexibility for policy implementation, but the minimal room for internal political maneuvering and outside political interference. This step will comprehend changes that are largely administrative in nature but that have some political implications.

Phase 2 - Focusing on Processes, Operations, and Feedback: a Performance Monitoring System

Some systems set and track goals without face-to-face bargaining, using indicators to measure progress. They are most effective in areas in which the outputs to be tracked are relatively routine and unchanging, such as the number of teachers hired and their average education, or the proficiency of students on an examination. Rather than a focus on the management of projects or people, here the focus is on operations management whether at the level of the operating system as a whole, or on key operating processes or sub systems such as personnel or payroll, the focus is on operating system improvement through capacity measurement, data reliability and comparability. Commonly, data are collected and analyzed using an automated system, reporting is frequent and timely, and the information can be used for decision making. These types of system are known as Performance Monitoring Systems.

Step 4 - Improving Operating Systems

The focus here will be on the improvement of key organizational processes. This is the modernizing step in which technology transfer takes place. At this phase, both organizational and informational systems, are imported into the MED. This step depends heavily on success in the prior one and also on careful deliberate design of processes. Often the attempt to transfer modern technology such as merit systems or computers to organizations which do not have the structure to accommodate them or the systems to adapt is frustrated before it begins. The changes contemplated in this phase will be efficiency oriented and have mostly administrative impacts.

Step 5 - Improving Quality of Outputs

Once the foregoing steps have been accomplished, the MED will be ready to monitor and evaluate its own performance. More importantly, rather than being a mere exercise in keeping statistics or tracking indicators, the capacity built in the foregoing phases will allow MED to use the information gathered in monitoring to make decisions and changes for continued improvement. Much of the design work for this step should have been completed as projects during the prior two steps. The impacts in this step will be wholly administrative.

b. Implementation Plan

The following section outlines an implementation plan for the phases and steps discussed above. It presents concrete recommendations for change at the MED. The implementation plan does not include level of effort.

Step 1 - Policy Precursors

- **Streamline Legal Foundations of Educational Administration.**
As noted above, the educational administration is based on a confusing, sometimes conflicting set of laws. Some cover education and cover government organization in general. All affect the organization, policy formulation and dissemination, and management of MED. Among those activities required:
 - Repeal of the *Ley de Nomenclatura*
 - Development of a new *Ley Orgánica del Ministerio de Educación*
 - Development of a new *Ley de Educación Primaria*
 - Clarification of coverage of various laws which govern work in the Public Sector such as *Código del Trabajo*, *Ley de Servicio Civil y Administración*
 - Updating of *Código del Trabajo*

- **Implement the Teaching Profession Law.**
The law itself could be better written, but it does contain the seeds of a much needed change, the professionalization of teachers through a qualifications system. Among the activities which might be considered in this area:
 - Implement the present law or draft a new one
 - Study alternative means to fund the law's salary provisions
 - Clarify the role of unions in the grievance process
 - Congressional suspension of the most troublesome parts of the present law (salaries and grievances)
 - Agreement to phased implementation of the present proposed regulations

- **Create an Administrative Career**
Even if the changes suggested below are adopted, one problem of ongoing concern for MED management will be the qualifications, training, and experience of those who manage the MED. If administration is to be strengthened in order to preserve investments made by USAID or other donors and to afford sustainability to change, then attention must be paid to administrative preparation and training. This could include the development of the Administrative Credentialing system used in most jurisdictions in the United States. Some suggested activities in this area are:
 - Development of an Administrative Career Law for educators or a section in the Teaching Career
 - Provision of management training by MED for new

- administrators as initial career step
- Development of probationary period for MED managers
- Development of educational administration and supervision curriculum at university or normal School
- Development of credentialing programs with existing institutes such as INCAE or Nicaragua's INAP
- Partnership programs with U.S. universities

Step 2 - Improving Management of the System

- **Improve Project Management and Coordination**
 While the goal of the recommendations made in this chapter is to strengthen the MED system, it must continue day-to-day operations as it implements these changes. Therefore, efficiency in project management is essential. MED personnel must be able to continue in their responsibilities while developing the organization. In short, the MED must become self-transforming. Thus, it immediately must become better at management and coordination if it is to accomplish these tasks. If it is to become self-transforming, that is administer its own change, it must increase the ability of its personnel to manage projects. A number of activities are suggested:
 - Survey existing courses in project design and management given by INCAE or INAP
 - Contract with local firm for training
 - Develop cross unit implementation teams
 - Develop one-, three-, and five- year policy objectives statement
- **Installing a Management System**
 Most of the changes in the MED will be project based, that is, those who oversee them will complete the changes and then go on to other changes or return to the management of operations. The system most appropriate to strengthening the management of projects and which also improves management overall is Management by Objectives. It is recommended that MED install such a system to improve its ability to manage operations and to self transform. This would require the following activities.
 - Select technical assistance for MBO project to include design, training and monitoring (INCAE, INAP)
 - Select upper management of MED for MBO training
 - Develop MBO calendar
 - Disseminate policy objectives
 - Hold workshops for Regional and Municipal offices
 - Develop projects and design
 - Pilot MBO system

Step 3 - Changing The Structure

- **Reorganize the Central MED**

The structural basis for constructing an efficient and effective MED does exist. While the installation of MBO will have a salutary effect on coordination, some attention needs to be paid to structural arrangements as well as managerial ones; that is to changing the lines of authority as well as improving coordination. The activities that might be accomplished in this regard are as follows:

 - Develop functional description of each unit down to the department level
 - Eliminate overlap of function through redefinition
 - Specify functions and responsibilities of Vice Ministers
 - Eliminate Planning Bureau and make it part of Administration Bureau
 - Tie planning with finance
- **Deconcentrate Power**

The MED needs to be streamlined and move to further deconcentration rather than decentralization. The Ministry needs to reduce its complexity, eliminate duplication and increase accountability. It should continue to centralize policy direction, but deconcentrate implementing power. One way to do this would be to remove some of the layers of bureaucracy; others include:

 - Eliminate the Regional Offices and have Departments or Municipal Offices only
 - Eliminate Regional and Municipal Planning Units
 - Change to an encumbrance budgeting system
 - Strengthen Local Councils
 - Develop supervisory system through Education Specialists
 - Establish local revolving book funds
 - Increase Central MED visits to municipalities
 - Develop payroll system at MED rather than Ministry of Finance
 - Conduct pilot study on local financing

Step 4 - Improving Operating Systems

- **Upgrade the Personnel System**

The personnel system of the MED is rudimentary, yet personnel costs consumes 86 to 92% of the MED budget. Most systems and tools need developing, these include:

 - Develop job descriptions for ministry personnel

- Develop position classification manual and update classifications
 - Develop merit hiring system
 - Develop salary schedules
 - Develop performance evaluation system
 - Train in performance evaluation
 - Develop progressive discipline system
 - Develop and publish policies and procedures manuals for all MED personnel policies
 - Improve health and social service for employees
- **Upgrade Personnel Record Keeping**
Like the personnel system, this important activity is at best rudimentary. It could profit from a number of innovations completed through the following activities:
 - Inventory personnel activities supported by MED, both centrally and regionally
 - Survey of data elements now maintained by MED
 - Survey of organizational legal or privacy-related requirements
 - Microfilming of files
 - Personnel record system automation
 - *development of RFP
 - *vendor competition
 - *selection
 - *procurement
 - *installation and customization
 - *training
 - *design of new forms
 - *testing and revision
 - Review of Regional Office records
 - Documentation requirements
- **Upgrade of Payroll System**
At present, the payroll department employs about a third of the people in the Human Resources Section in laborious manual processes that are rife with error and the possibility of abuse. This system could be greatly improved by accomplishment of the following activities:
 - Review and redesign of payroll process
 - Streamlining data entry (bubble readers)
 - Design MIS links to personnel and planning systems
 - Review of approval steps needed with automation
 - Review of benefit package and salary schedule
 - Payroll record system automation
 - *development of RFP

- *vendor competition
- *selection
- *procurement
- *installation and customization
- *training
- *design of new forms
- *testing and revision
- Review of check printing and control

- **Upgrade the Planning Process**

Planning is not an effective process in the MED. What is needed is a system that does not just estimate system inputs, but that also monitors quality and quantity of outputs, feeds the information back to decision makers in a timely fashion for adjustment, and evaluates the impact of outputs. The following activities need to be accomplished to make this happen:

- Review of MED programs and goals
- Design and development of capacity tracking system
 - *core Technology Review
 - *key Capacity Measures
 - *process Analysis
 - *staff Utilization Measures and Norms
 - *breakeven Analysis
- Review of MED operations for decision points
- Design of MED decision system information requirements
- Development of decision reporting system
- Development of decision reporting calendar
- Development of decision responsibility matrix
- Development of program evaluation capacity
 - *training in program evaluation
 - *training in program monitoring
 - *training in statistics
 - *design of client (student) profiles
 - time of use
 - use frequency

Step 5 - Improve Output Quality

- **Implement a Management Information System**

At this juncture Central MED will have been strengthened and the capacity for administration improved and supported. Also information will be available for tracking change, and systems which can take and support decisions will be in place. The next step is to link the pieces together into system wide reporting system or MIS. It is important to note that this does not have to be an automated system. This would include the following activities:

- Review available information
- Develop key reports
 - *executive user conference
 - *end user conference
- Develop system requirements
 - *system design
 - *determine automation requirements
- RFP (for automated system only)
- Put system into test
- Move system to production

- **Install Performance Indicator System**

The MED lacks does not know how it is doing in its key programs. Improvements in this area are built on the improvements in MBO and the Planning Bureau contemplated earlier, especially in the suggestions that this Bureau be moved to Administration, tied to budgeting, and that it be strengthened in the area of Program Evaluation. With the collection of key operational monitoring data in an MIS (turnover, absences, expenditure, demand), the only thing that remains to be accomplished is to measure the quality of outputs and relate them to inputs (costs). This is the purpose of a performance indicator system to be based on key program outputs. This could be accomplished by the following activities:

- Development of program objectives for each MED program
- Design and selection of performance indicators for each MED program
 - *accomplishment of objectives
 - *immediate results
 - *intermediate impacts
 - *system impacts
 - *side effects
- Implementation of program evaluation
 - *design of measures
 - *design collection instruments and schedule
 - *specification of where measures are found
 - *operationalization of measures
 - rater training
 - measure reliability
 - generalizable for cross comparison
- Design of collection system for program expenditure
 - *data from new budget system
- Relation of expenditure to performance data
- Design of cost effectiveness report

VI. MANAGEMENT INFORMATION SYSTEMS

This chapter analyzes the data processing, data analysis, and information dissemination capabilities of the MED. Organizational structure, human resource needs, and available equipment are also examined.

Enrollment data flows are sufficient but very slow, and only data on enrollment are reported annually. Initial enrollment bulletins are available only at the end of the school year; special tabulations are done by hand. Analysis is reduced to tabular presentation of data with a verbal description of percentages. There is no automation of personnel analysis, budgeting, or school mapping.

It is recommended that the MED make policy changes to require faster reporting. Current computer hardware is adequate owing to a recent donation by UNESCO, but there is a need for training of personnel in specialized software applications. Other information functions (school libraries, teaching methods documentation on computer and film) are greatly outdated and should be supported with new equipment and personnel training.

A. Introduction

Nicaragua's substantive education problems are so massive (e.g., only 22% of first graders ever complete the sixth grade) that it might be argued that investment in a Management Information System (MIS) is not a priority. However, it can also be argued that only because the MED already has a rudimentary MIS, can the quantitative dimensions of these substantive problems be measured, and therefore an MIS is important. Further, it is partly because the MIS is not well developed that there are no clear policy priorities for improving the education system. For example, the common wisdom about the sector is that 60% of the teachers are uncertified. This information is approximately three years out of date. Data for 1990 show that only about 40% of the teaching force are uncertified. However, the MIS has not produced updated reports that can better inform this policy discussion. The 1990 information on teacher preparation was produced as a result of a special request from the assessment team.

A slightly better MIS would regularly generate more of the ready-made data needed to allow policy analysts to make data-based recommendations. A well-developed MIS, which would be part of wider Policy Support System (PSS), could carry out policy research and could help provide up-to-date technical information for policy discussions.

B. Organization of the MED Management Information System

The MIS Section at the MED is called the *Dirección de Informática*. "Informatics" is an appropriate name for this Section of the Ministry, as it is responsible for more than just management information systems. Although MIS is considered a primary function of

the division, the degree to which information is processed to aid management decisions is limited.

The *Dirección de Informática* is divided into three Departments:

- *Cómputos* (Computation)
- *Estadística* (Statistics)
- *Documentación y Bibliotecas* (Documentation and Libraries)

The *Departamento de Cómputos* handles computerized input of school statistics and intermediate report generation. Traditionally, the reporting system has dealt with only school statistics. However, as will be discussed subsequently, the computation department is now equipped to carry out all major computational requirements of the Ministry. The statistics department's principal function is to carry out simple analyses and report the school statistics generated by the computer center. The documentation and information department manages the MED library and pedagogical documentation center. As a result of the last MED reorganization, this department is also charged with overseeing all school libraries.

C. Human Resources

With a total technical staff of 23, the *Dirección de Informática* has roughly 10% of the technical staff of the MED central office. The staff is classified, as to specialization and level of formal training, in the following table.

Table 22: Staff Education Levels

Specializations	Level of training			
	Tec. Medio	Tec. Sup.	BS/BA	Univ. Student
Depto. de Cómputo Economics Statistics Social sciences	2	1	2	2
Depto. de Estadística Economics Statistics	2	2	2	
Depto. de Doc. y Biblio. Humanities Economics			5 3	2

There is a dearth of personnel with university degree training in computer science, information science, or library science. More than half of the university degree staff are economists, with the remainder holding humanities degrees.

The relatively low salary structure at the MED makes it unlikely that staff with formal degrees in computer science or programming will stay in the MED. Although recent graduates in computer science might be recruited, the generalizability of their training to the private sector and to higher-paying ministries makes permanence unlikely.

Other skills, such as library science or statistics are less generalizable to other sectors and, therefore, permanent university trained staff in those areas would be easier to maintain. Nevertheless, specialized degree training in some of these areas may simply not be available in Nicaragua. Therefore, many of the technical human resource needs of the section must be met through short-term training. The following table details short-term training that had been received by the staff at the time of the assessment.

Table 23: Short Term Staff Training

Courses Received	Depto. de Cómputo	Depto. de Estadística	Depto. de Doc. y Biblio.
Imports technician	1		
Customs law	1		
Off-the-shelf software	6		
Statistics	1		
Statistics software	1		
Documentation analyst			2
Curric. planning			1
Library services			1
Information automatiz.			1
Doc. info. management			1
Micro Isis software			2
Film librarianship			1
Cataloguing			1
Catal. and classif.			1

According to the evidence presented in this table, even the short-term training received has been deficient. There have been three problems with training received: lack of subject-matter depth, lack of training quantity, and lack of collaborative training.

1. **Lack of Depth.** The courses have only introduced simple computer software techniques. As an example, in the computation department, no one has received training in programming with higher-level languages or even in the programming aspects of off-the-shelf packages, such as the applications languages of database management programs. As a result, the department is dependent on "canned" packages or applications that frequently do not exactly meet the MED's requirements². Without adequate training of personnel, the software cannot be adapted to generate specific reports needed by MED. At present, outside consultants are the department's only option. These individuals are either too expensive (if national and to be paid for by MED budget) or not always available (if funded by donor agencies).

2. **Simple Quantitative Insufficiency.** The training has been of insufficient duration and breadth. The staff in the *Depto. de Cómputo* have all received the same three-week course in off-the-shelf software. In this course, staff who had never used a computer were introduced to four packages, plus hardware and operating system, in just three weeks. This amounts to only one short course per staff member, on average, and the absorption rate must have been very low for many staff. Furthermore, none of the training has been oriented specifically to educational statistics and planning techniques, but has, by necessity given its duration, covered software packages in general. The staff in the *Depto. de Documentación y Biblioteca* have also received an average of one or two short courses. Staff in the Statistics Department have reportedly received no short-term training.

3. **Lack of Collaborative Training.** Much of the limited training received has been classroom-oriented. Applied informatics, however, can best be absorbed through "learning by doing." This requires a type of training where the trainer collaborates with the trainees in the hands-on solution to both everyday and strategic information problems. This implies that, aside from the need for classroom-type training, there is also a need for either long-term collaborative technical assistance, or a program of repeat visits that are relaxed, well-planned, and highly task-oriented.

²An interesting case in point that proves the importance of independence from "canned" packages is offered by the private Colegio de las Teresianas, in which the management is almost entirely computerized. The international order of Santa Teresa de Jesús offers their schools a "canned" school management program. The local Teresianas, however, preferred to write their management tools from scratch in dBASE, because the "canned" package did not offer the flexibility of adaptation to local needs.

In summary, the staff have a great need for short-term training in a wide variety of areas. Specific recommendations will be made below, regarding both subject-matter and ways to deal with staff turnover.

D. Computer Hardware, Software, and Peripherals

In a short term period of one year, hardware and software availability are not a serious bottleneck to improving the MIS at the central level. UNESCO has recently made a substantial donation of equipment to the MED. This is part of a pilot project to test the feasibility of regionalized data entry. The equipment arrived in January, and it has greatly increased the MED's potential data processing capacity. The objective of the project is to test the feasibility of having all of the data on schools and enrollment entered at the region level. A system is to be put into place whereby these data are eventually transmitted electronically to the MED's central offices. This transmission will take place either by diskette, or, as communication networks improve, by modem and telephone lines.

In addition, hardware and software are almost never a real bottleneck. Rather, organization, human resources, and a real demand for data and analysis from the decision-makers are the primary difficulties in establishing a successful MIS. Equipment is relatively inexpensive and international organizations can donate it with ease. If the human resources and organizational problems are solved, the rest will follow with minimal effort.

The following table details the amount of hardware available to the MED for informatics purposes. All of the PS2 and desktop publishing hardware is part of the UNESCO donation.

Table 24: MED Computer Assets

Location	Type	RAM	Disk(s)
<i>Sede Central</i>			
<i>Depto. de Cómputo</i>	1 IBM PS2/80 Network Server 4 terminals	4 Mb 640 Kb	120 Mb 1.44 Mb
	Desktop publishing 2 IBM PS2/70 1 Datacopy 380 Scanner 1 Xerox 4030 Laser Printer	640 Kb	40 Mb
<i>Depto. de Estadística</i>	1 IBM AT Clone 1 IBM XT Clone	640 Kb 640 Kb	20 Mb 20 Mb
<i>Depto. de Doc. y Biblio.</i>	1 IBM AT Clone 1 IBM XT Clone	640 Kb 640 Kb	20 Mb 20 Mb
<i>Regiones</i>			
<i>Region I</i>	1 IBM PS2/70 Network Server 3 terminals	4 Mb 640 Kb	80 Mb 1.44 Mb
<i>Region II</i>	1 IBM XT Clone	640 Kb	20 Mb
<i>Region III</i>	1 IBM PS2/70 Network Server 3 terminals	4 Mb 640 Kb	80 Mb 1.44 Mb
<i>Region IV</i>	1 IBM AT Clone	640 Kb	20 Mb
<i>Region V</i>	1 IBM AT Clone	640 Kb	20 Mb
<i>Region VI</i>	1 IBM PS2/70 Network Server 3 terminals	4 Mb 640 Kb	80 Mb 1.44 Mb
<i>RAAN</i>	None		
<i>RAAS</i>	None		
<i>Zona Especial</i>	None		

The only potential equipment bottleneck to the data collection plan may be at the regional level. If the school-level data entry is to effectively take place in the regions, it

is likely that a single XT or AT clone will be insufficient to carry out data entry in a timely manner. For regions having only one or no PCs, the provision of one low-end clone specifically for data entry will be necessary. (In the very small region, a single higher-end clone could suffice for all computer tasks aside from data entry, at least in the short run.)

If all of the regions are to participate fully in data entry, the case of Region II, where there is only an XT clone, should be addressed. This region would need at least an AT-class computer to carry out the work. All other regions have either AT-class clones, or PS2/70 network servers with terminals.

In the medium term (1-3 years), the MED should move toward the analysis (rather than just the presentation) of school-level data. Analysis at this level is needed in order to carry out studies about the determinants of school-level effectiveness. For this type of analysis to be possible, more hard disk capacity would be needed. In the medium term the plan should, therefore, be to bring the MED's *Depto. de Cómputo* to at least 300 Mb of hard disk capacity, possibly with removable disk technology.

If the MED is to be able to provide true information services for management decision-making, it will have to carry a much heavier load of data on personnel, materials, facilities, and budgeting. Thus, in a medium term plan there should be provision to acquire at least another high-end computer for analysis purposes.

There are also unmet software needs. In the commercial software area, the MED currently uses Microsoft Works, Lotus 1-2-3, WordPerfect, Foxbase, and the Novell Network software. A fuller complement of legal commercial packages should be available, so that manuals and updates are no problem. Spanish language manuals for all software (if available) are a necessity. Such manuals are currently available to the MED only for Microsoft Works, Lotus 1-2-3, WordPerfect, and dBASE. Specialized commercial or non-commercial packages such as MicroIsis, Systat or SPSS, STEP or EDFISIMO, should eventually also be made available for conducting statistical analyses and projections.

E. Data Gathering and Reporting

The *Dirección de Informática* has, up to now, gathered and reported only school-level information on enrollment and student characteristics. The procedures for gathering data about these factors are adequate. Personnel at the school level are informed about their reporting duties and data channels. Actual data processing and reporting of the information, however, is very slow. The last years have been particularly slow, because turnover in personnel at the *Sede Central* has been high. Statistical bulletins reporting initial enrollment are not widely available until the middle or end of the school year. For example, the Matrícula Inicial 1988 bulletin was not available until October 1988. The 1989 bulletin was only available in draft and the 1990 bulletin was not available at the time of the assessment in March 1991. These bulletins contain only

data about enrollment at beginning of the school year. No other yearly bulletins or reports are prepared.

The Sexenio bulletins, summarizing six years of information, are the only source of compiled information about teachers and schools. These have been 3-4 years late. The bulletin for the 1978-1984 Sexenio was published in 1988. Of course, much of this information is internally available, and can be reported on an as-needed basis, but even then it can take days to obtain a simple report (e.g., numbers of teachers classified simply by urban-rural zone, administrative region, and public-private control).

An additional source of data has recently been created with the listing of schools carried out by Aguirre International as part of their technical assistance effort in assisting the MED to produce and distribute new textbooks. The list, which includes all of the schools in the country with enrollment by grade, is an impressive data entry effort. It is useful for the purposes of materials distribution. However, although set up in a relational database, the data represent neither a school mapping study nor a genuine database management system. Requests from the team for manipulation of the data in conceptually, analytically, or administratively significant ways for decision-making could not be carried out. This was a result of the nature of the data collected, the limited programming that had been carried out with the database, and lack of training of personnel in the use of the software.

The present reporting requirements of the MED are simple and the system is small. For example, properly designed data-entry screens which do not require a clerk to enter totals, must be created. When this is accomplished, data entry should take about five minutes per school with an experienced clerk. Thus, it should take about 20-30 six-hour work days per region to enter the data. Cleaning and aggregating the data should take another few days. With minimal human resource use (one to two clerks for 10-15 days) in each region, it would seem that the initial enrollment data could be available to the MED Central Offices within the first 30 working days after the beginning of the school year.

Once all the information is entered and has been sent to the MED Central in diskette form, putting all regions together and printing the reports should take a few extra days. With laser technology, all this could be ready for the printer immediately. In all, these reports could be delivered to the printer by the end of the first two months of the school year.

Given the relative technical ease with which this task could be completed, it is clear that the bottleneck cannot be an absolute technical one. It is difficult to avoid the impression that there has been no sustained demand for efficient reporting, and hence for data-based planning and decision-making. Demands for information have tended to be ad hoc, and when the need for a particular piece of information is met, support for information processing wanes.

In addition, staff kept busy with ad hoc requests are distracted from the routine, but important, entry and tabulation. As a counter-example, payroll processing, which is a

monthly task, is fully computerized, in accordance with the implicit importance attached to this task. For institutional reasons, it is computerized at the Ministry of Finance, so these data are not available to the MED for analysis, except by hand transcription from a computerized printout. In short, it is a matter of attaching enough policy importance to data processing to supply the human resources necessary for routine statistical reporting tasks.

F. Options for MIS Services

Aside from attaching more importance to timeliness, the *Dirección de Informática* can serve the MED by providing other types of services, even within the narrow sense of reporting and presenting. The following are examples of how an improved MIS could provide broader information to the MED without much additional effort. An exhaustive list of possible functions should be part of an MIS workplan.

1. The current *Matrícula Inicial* form carries teacher and classroom information. The time required to enter teacher and classroom information was included in the calculations above. Thus, the reporting on the *Matrícula Inicial* could include reporting on numbers of teachers and classrooms, and this could be done within one or two months of the beginning of the school year. This kind of reporting is currently done only every six years.

2. As mentioned above, the payroll and personnel information is computerized at the Ministry of Finance, for which MED must pay a fee. Currently, analysis of personnel issues at the MED is done either entirely by hand or, as mentioned above, by hand transcription of Ministry of Finance printouts. There is no reason why some of this information cannot be computer-handled at the MED, for analytical and managerial purposes. If there is concern over privacy, files without names (when salary issues are being analyzed) or without salary levels (when assignment issues are being analyzed) could be provided to MED personnel.

3. One consequence of the fact that information is entirely school-centered is that the information on programs such as Adult Education is quite poor, since these programs are not school-based. Such programs have been notoriously difficult to evaluate, because it is not known how many adults have been trained, or what the persistence rate is within the programs. Because adults can join the classes at any point in the cycle, the fact that there were 100 attending classes at the beginning of a cycle, and 100 at the end, could theoretically hide a dropout rate of anywhere from 0 to 100%, since the 100 at the beginning may have all dropped out to be replaced by another 100. The *Dirección de Informática* and the *Dirección de Educación de Adultos* should continue efforts already under way to improve the statistical reporting system on the Adult Education program.

Under a medium-to-long-term MIS development plan, the *Dirección de Informática* could turn itself into a full-fledged Policy Support System for the MED.

Some elements of such a plan, which are already beginning to be considered by some of the *Informática* personnel, are as follows.

The *Depto. de Cómputo* could offer a broader array of services, which it is now acquiring the hardware to provide, such as:

- Geographical Information Systems for school mapping;
- Use of computer graphics and desktop publishing capabilities for policy dialogue and lobbying other ministries and the executive;
- Use of desktop publishing capabilities for preparation of textbook drafts;
- Formal modeling and forecasting capabilities to serve the *Dirección de Planificación Educativa*.

It could be argued that most of these functions should be decentralized, so that, for example, the *Dirección de Ingeniería y Arquitectura Escolar* would carry out GIS functions. This is an acceptable approach in which the *Depto. de Cómputo* would serve as an internal resource in these functions. In fact, in this day of extremely powerful and inexpensive desktops, there is no justification for much centralized computing, except where shared databases are a necessity, and this is not the case at the MED. A computer center can instead act as a resource center for decentralized computing. Thus, there is no implication here that all of these functions need to be centralized. The point is that the *Dirección de Informática* could either carry out these operations itself (if a centralized model is chosen for institutional reasons), or foster them throughout the MED. In either case it would be stepping into a wider role as a Policy Support System.

The *Depto. de Estadísticas* could be upgraded to offer a fuller scope of research and evaluation services to the MED. There is currently no MED-wide office offering these capabilities. Although there is a section of research and evaluation within the *Dirección de Planificación Curricular*, it appears that the section's main function deals with student achievement. It is difficult, therefore, to understand where and how data-based policy analysis is supposed to take place. The plan should be for the *Depto. de Estadísticas* to acquire true (if perhaps modest) statistical analysis and research design capabilities, rather than simply be in charge of tabulating data.

The *Depto. de Documentación y Biblioteca* could also have additional functions. These include:

- transform the *Escuela Normal* libraries into Region-wide pedagogical documentation centers;
- computerize the Managua documentation center with CD-ROM databases, so that educators and policy makers could computer-search the world literature on particular education issues and approaches that have been

tried and worked or not worked in other countries;

- update the library on teaching and other educational films in terms of both hardware and subject matter.

In short, the *Depto. de Documentación* could transform itself into a modern, computerized documentation center.

G. Conclusions and Recommendations

In order to carry out the MIS development plan outlined above, several needs must be met. Specific details such as workplans, timing, the software packages to be chosen and the like should be elaborated once there is a decision to invest in developing certain functions of the MIS. However, general needs are presented as examples of priority areas. These needs are in 1) training, 2) equipment, and 3) technical assistance/collaborative training. As a policy recommendation, the MED could be asked to make policy and administrative changes that would improve the flow of data and their use in data-based policy-making.

1. Training

The most intense short-term need is for training, as follows:

- *Depto. de Cómputo*: higher-level and applications languages; more in-depth training in commercial packages, such as use of Lotus 1-2-3 for modeling and analysis; exposure to more packages, such as desktop publishing, forecasting and planning; preventive hardware diagnostics and maintenance, and basic hardware repairs.
- *Depto. de Estadística*: off-the-shelf standard packages with specific orientation to educational statistics, specialized statistical analysis packages.
- *Depto. de Documentación y Biblioteca*: further specialized short-term training in library sciences, including use of informatics in cataloguing and abstracts database searching.

If MED salaries continue to be as uncompetitive as they are now, a plan or policy needs to be put in place so that the benefits of the training remain with the MED. An example would be a policy of formal agreement that trainees stay with the MED for a fixed amount of time after completing various types of training (e.g., one year for training lasting less than one month, two years for training up to six months, five years for MS-level training), and to search for and train a substitute for two months prior to departure. Of course, as long as a hiring freeze is in place, this would not be possible.

2. Equipment

There are short and medium-long range equipment needs. In the short run, the recommendations are as follows:

- *Depto. de Cómputo*: Spanish language software manuals, broader selection of legalized commercial software, access to specialized non-commercial software for educational planning and forecasting.
- **Region II**: inexpensive, relatively low-end computer for data entry.
- *Depto. de Estadística*: at least one more relatively inexpensive computer, to allow one computer for every two analysts.
- *Depto. de Documentación y Biblioteca*: update hardware and software for pedagogical purposes; update computer search capabilities with hardware and software (e.g., CD-ROM reader and service).

In the longer run:

- *Depto. de Cómputo*: another higher-end computer, with at least 300Mb disk capacity, for branching into personnel analysis, possible payroll-based processing, GIS for school mapping, analysis of school-level data, etc.
- **Regions I, IV, V**: extra low-end computer dedicated to data entry, so each region will have at least one machine dedicated largely to data entry.
- *Depto. de Documentación y Biblioteca*: assistance with school library books and equipment.

3. Technical Assistance/Collaborative Training

- *Depto. de Cómputo* and/or *Estadística*: use of computer graphics and desktop publishing in policy dialogue; working on task-oriented policy analysis capabilities such as determining the true nature and causes of the repetition problem; setting up school-level databases for school effectiveness analysis.
- *Depto. de Documentación y Biblioteca*: assist in upgrade of normal schools to serve as teaching resources documentation centers; upgrade Managua center to serve as computerized documentation center; upgrade all school libraries.

4. Policy Changes

The MED should attempt to speed up its reporting procedures by allocating the human resources needed to enter and process data, and by setting up incentives for prompt delivery of data. At the same time, the MED should elevate the technical level of its policy debates by fostering the view of technical information and computerized tools as instruments for policy debate. This can be accomplished within the Ministry by determining nodes of technical discussion or debate, and making a point of feeding both sides of these debates with technical input. It can also be fostered between the Ministry and other ministries by assisting the Ministry in learning how to prepare computerized, research-based policy dialogue tools that take advantage of its computer graphics, desktop publishing capabilities, and data systems.

VII. CURRICULUM AND INSTRUCTION

This chapter examines the capability of the MED to carry out curriculum development activities in terms of instructional materials, existing infrastructure, and pedagogy.

The Curriculum Planning Bureau lacks personnel trained in modern curriculum and materials design, using automated technology. The new AID-financed textbooks are colorful and grade level appropriate, but the content is traditional and based on information acquisition rather than problem solving. The books could better reflect Nicaraguan reality, especially in their portrayal of nuclear families with men as the only breadwinners.

Active student participation and student time on task are minimal in Nicaraguan primary classrooms. Observations showed teacher-centered instructional activities dominated the daily schedule. The few available instructional aids, such as the blackboard, were used ineffectively.

The physical conditions of many schools increase the difficulty of effective instructional delivery. Many children do not have desks, lights are lacking, roofs leak during the rainy season, and chalkboards are scarred, chipped, broken or too small.

It is recommended that the MED should begin to create the capability within the Curriculum Planning Bureau to develop its own books and learning materials. The Nicaraguan school environment, will require the restocking of current books for at least another year. If current levels of textbook availability are desirable, the MED should investigate the feasibility of donor funding for 1992 textbooks.

The Bureau should plan a new program and new instructional materials to be ready by 1993, requiring training in curriculum development, instructional design, word processing and desktop publishing as well as appropriate reference works and equipment. Teachers should be trained in classroom management techniques and manipulation of existing instructional aids by taking advantage of the existing in-service training system.

A. MED infrastructure and procedures for curriculum development

In January 1991, there was a reorganization of the MED. The new structure for curriculum development activities provided for a completely separate unit in the MED which would be responsible for all curricular activities.

Previously, curriculum development took place within each of the primary, secondary, and preschool bureaus, through what were called "content and methods" units. The new curriculum unit is part of the Bureau of Planning and Development (*Dirección General de Planificación y Desarrollo*). The unit is called the Curriculum Planning Section, and it houses three departments and a program as follows:

- The Department of Curricular Programming

- The Department of Research and Evaluation
- The Department of School Textbooks
- The Bilingual and Intercultural Program.

The **Curriculum Programming Department** has 32 persons representing all subjects and grades. Its job is to develop the objectives of the educational program, to guarantee their smooth sequence, and to produce teachers guides and materials. Most of the personnel in the department are experienced teachers but they have no curriculum or materials development training. They have never used instructional systems design principles. The director said that the staff need training to be brought up to date on learning theory, materials design and development, and program evaluation. They also need basic reference materials. The director felt that although she had participated in the selection of the new textbooks, the ideal would be to have their own books, written in Nicaragua for their own program.

With respect to the new books and the curriculum, she felt that the really great changes took place in the social studies curriculum, and in the creation of two new subjects: moral and civic education, and economics and society.

The **Research and Evaluation Department** has a recently appointed director and three other technical staff. These include: a sociologist, an educational specialist, and a language teacher. The director worked in the university for 13 years, and is an educational psychologist in research. He was recently an advisor on the director general's staff.

The director sees the present time as one of opportunity for his department, because everything is being reformulated. He said past research was qualitative and impressionistic and not reliable, nor rigorous. He sees his unit as providing input to the rest of the departments in the curriculum planning section and to the MED leadership. He would like to do some research on the reasons for dropouts between the first and second grades. He also feels that the section should do studies of reading and math achievement in first and second grades. In addition, there has been no study of teachers, and teachers are not evaluated.

Finally, he felt that he lacked equipment and trained personnel. At the least, he stated that the section would need calculators, computers, copy machines and the like.

The **Textbook Department** is staffed by a director and five other specialists. Their job is to design and develop criteria for instructional materials, to adapt and authorize texts for MED use, to promote training for teachers and supervisors in the use of instructional materials, and to give technical assistance and encouragement to teachers and local authors in writing and producing local (Nicaraguan) textbooks.

This department participated in the teams that were formed to select and adapt the new textbooks that are now being introduced into the schools. The director recognized that the task was done backwards, i.e. that the books were selected before there was a new curriculum and that it ought to have been the other way around. However, there was a great rush to obtain new books and to take advantage of the opportunity. At the time of the assessment, the department had been working on the workshops to introduce the books. The director felt that these had not been as satisfactory as the department wanted, because there was so little time, and insufficient books were available to give one to each teacher when the workshops were being held.

There were two major concerns in providing the new books: first was to depoliticize the textbooks nationwide, and this meant replacement of the old books from the last regime. Second was to provide a variety of books and not have a *texto único* (single book). The director considers 1991-1992 as transition years for the curriculum. She sees her major job as evaluating the new books, adapting the curriculum so the new books and the curriculum are in synchronization, and developing a profile of the kind of student they want to produce (*un perfil del egresado de cada nivel*).

A major operational decision for this unit is to determine, in the very near future, about the replacement of the current, new textbooks. To carry out an extensive analysis of the present books without being sure that they could be restocked, would not be a good use of their time. That is an issue that needs to be addressed very quickly. If the books are not to be restocked en masse, or if only a few of them will be restocked, then textbook analysis and planning time could be more effectively allocated.

The **Bilingual Intercultural Program** has existed as an integral group prior to the new reorganization and the staff all have worked together previously. The bilingual program has a special professional requirement, because each member of the group should know one or more of the three significant languages spoken in Nicaragua: Miskito, Sumo, and Creole English.

In carrying out its work, the program uses the numbers of some 75,000 Miskitos, 9,000 Sumos, and some 27,000 *criollos* in Nicaragua. Each group speaks its own language and has its own cultural identity. The *Criollos* are a predominately black group of African origin, and they speak a dialect of English. Depending on their location and work, some of the members of these groups speak Spanish, and some of the Sumos also speak Miskito.

The MED runs educational programs for 7,369 Miskito children in 59 centers with 160 teachers in northeastern Nicaragua. The MED has 311 Sumo children enrolled in 13 centers with 13 teachers, and 4,200 children enrolled in 17 centers with 165 teachers, primarily in the Bluefields region. Instruction in these centers is carried out in the language of the ethnic group, Spanish is taught as a second language but first language Spanish texts are used. The *Criollo* group also learn standard English, as they have identified this as a need for themselves. In 1985, 1986 and 1987, the MED, through this program, developed instructional materials for these groups.

The curricular strategy for bilingual intercultural education is to provide the same program for all the groups but in their own language and adapted to the ethnic group. The program began in 1980 and was implemented in 1984, but as of 1991 only 30% of the possible school population is covered.

The new textbooks are probably not culturally appropriate for the bilingual intercultural schools. The MED does not currently have a bilingual policy, but when a policy is developed, and if the budget allows, texts that are culturally and linguistically appropriate should be provided. Unfortunately, this program does not have a budget of its own and is unable to carry out its supervisory and development functions. Apparently, this is the result of the MED has not yet having set its bilingual policy.

This unit has received some technical and financial assistance in the past from external agencies such as UNDP, the German GTZ, from Holland, Denmark, and from a university in the U.S. What the unit needs most is a budget to be able to carry out its activities and also technical assistance. Of all the groups in the Section of Curricular Planning, this one seemed to have the most coordinated and advanced program, and was the one that could start up most quickly and with the least difficulty.

Because of the size of the new Curricular Planning Section, it was necessary to move into new quarters in the MED complex. This move was in process in March 1991 when the present assessment was being carried out. In addition to the above personnel, there was a small Unicef group assisting the research and evaluation unit.

Regarding professional qualifications, only the director of the Curriculum Planning Section has a graduate degree (masters) in curriculum development. The other personnel have either normal school degrees or regular university bachelor degrees. About three quarters of the personnel in the Curriculum Planning Section have had previous experience in the MED in curriculum development activities. This experience was gained when they were associated with the primary or secondary education bureaus before the separation and creation of this new unit.

Thus, the Section of Curricular Planning has a technical staff with a lot of school and MED experience but with very little technical training in modern curriculum and instruction methods. In such a unit, which is responsible for very content of the instructional program, the personnel should all have specialized training in areas such as curriculum development, materials design, materials production, instructional systems, media design and development, evaluation of materials and programs, and computer applications to education.

B. The National Curriculum Program

The curriculum in Nicaragua is a national curriculum with modifications and adaptations only for the Atlantic region where ethnic groups exist in significant numbers, and where adaptations are required by the constitution. The rest of the nation is bound by the programs developed and promulgated by the central offices of the MED.

Although the curriculum is developed at the central MED, no national grade-level expectations have been developed. There is discussion of developing a profile of students by grade level from which minimum requirements can be drawn. An approach to this activity, however, has yet to be developed. Little is known about the student population in general because neither census data nor systematic surveys representative of the country as a whole have been undertaken.

As pointed out by the director of the evaluation unit, there is no national testing nor assessment program of any kind at any level in Nicaragua. Entrance to the university is based on high school average achievement scores. There is no comparability studies of achievement from school to school. Thus, a graduate from school X can't be compared with a graduate from school Y with any degree of certainty, since an outstanding student from one school might really not be as capable as a "mediocre" student from another school.

C. Instructional Materials

Instructional materials include all the resources available to assist teachers in doing an effective job with the learners with whom they work. This includes such common items as the chalkboard, charts, posters, pictures, flash cards, notebooks, pencil, crayons, felt tip markers, and textbooks. It also includes more contemporary things like calculators, radio, television, and personal computers. Behind this hardware is the software, or instructional strategies designed for learning-teaching, and for which these physical things serve as the medium or delivery path. In Nicaragua, only the chalkboard and pencil and paper are abundant, although textbooks are about to be available in all schools.

New textbooks were just being introduced in March 1991 when this primary school assessment was being carried out. The new books were in most of the schools, but had not been distributed by the second week of school. Further, not all of the books for certain grades had arrived in Nicaragua from publishers in other countries.

1. Textbook Selection

The new textbooks consist of forty-five different titles in the subject areas of language (reading and writing), mathematics, science, history and geography, and other subjects in the curriculum. They are meant to replace the textbooks of the previous regime, which the present government felt were too partisan and too politicized to be continued in use in Nicaraguan classrooms. They are, however, viewed as a transitory measure to the development of Nicaraguan based instructional materials.

Since it has barely been one year since the new government has been in office, it is indeed a great achievement for it to have been able to provide a whole new, stunning series of books for both the primary and secondary levels of education. This present report, focuses only on the books being introduced into the primary school grades

(Grades 1-6), and not on some 45 additional titles for the secondary school subjects.

The textbooks have been made possible through a donation of 12 million dollars from USAID/N through a buy-in to the centrally funded RTAC contract. It was clear that there would be no time to compose and print entirely new textbooks in less than a year, and so the MED organized teams to review the best existing books in Latin America, acquired through RTAC, and to adapt them to Nicaragua. Thus, the books have been printed primarily in Mexico, Colombia, and Peru.

Through RTAC, textbook publishers in Latin America were invited to submit books to MED for consideration. It was decided to examine the books, using the criteria of which books would be the easiest to adapt with the fewest changes to Nicaragua and its curriculum. A primary concern was to take out any political content and language that were not acceptable: e.g. if a book were Mexican, Nicaraguan vocabulary would have to be used where indicated, and Mexican political content would have to be adapted to Nicaragua. Also, the pictures and other material would have to be adapted to the local scene to the extent possible.

All this work was done by teams of people with six to ten individuals per team and about 50 persons overall. These persons were both old and new people to the MED and were all former teachers. The teams had to identify at least three texts for each subject, and to prioritize them. The most difficult were the history books, but a Nicaraguan author was located to prepare these books. A new area, moral and civic education, was introduced, and a text from Peru was found. All of this took place in a very short time: between May and December 1990.

2. Strengths and Weaknesses of the Texts

Recognizing that the books will be used only temporarily, they were reviewed by the team to provide guidance to the MED in the development of future instructional materials. The strategy for review of the new textbooks consisted of a quick overview of the book, followed by a more careful examination of its contents. From the point of view of content, interest was in the kinds of themes treated, the purpose for which they were presented, the sequence and flow of the material, and the appropriateness for the ages and grade levels of the children for whom the material was intended. Special features were also noted such as maps, pictures, hints for the teachers, and anything of special interest from an instructional perspective.

Finally, the evaluation considered the overall context for which the book was intended, and its appropriateness for children of the socio-economic groups we observed in Nicaraguan classrooms. What the text did not cover, and what it might have included to ensure a sound curricular approach that was functional and relevant was also considered.

On the whole, the texts were found to be very attractive, with bright color drawings that are appealing to children. Sequencing, graphics headings and illustrations

are all appropriate for grade school children. There is generally some brief indications to the teacher for teaching a particular unit. The texts appear to have been developed by competent designers and publishers, and they are providing much-needed learning materials for the classrooms.

Future text development could better build on modern learning theories. When these texts are replaced, they should incorporate active and holistic learning theory. The texts need to be intuitive and offer strong guidance to under trained teachers who require direction in classroom management and use of instructional aids for each lesson. New texts could reflect Nicaraguan culture and have a more contemporary focus so that the materials contribute to what Nicaragua wishes to achieve in its national development program.

The current texts may need to be replaced in a couple of years. Some are designed to be written in. Others are produced on paper that may have a short life span. Future materials development could plan for replacement based on the books being produced in workbook style or in hard cover.

3. Capacity for Local Textbook Production

The MED has used Nicaraguan presses in the past to print its books and materials. It still does so. MED uses the Tonio Pflaum Press at present for its smaller jobs. A representative of this press informed the team about the capacities for printing in Managua. They are as follows:

Table 25: Nicaraguan Press Capacity

Major Presses 1991 (Managua)

Press	Category	Capacity*
Companic	public	100,000/month
Grabdo Perez	private	50,000/month
La Union	private	30,000/month
Nacional	public	25,000/month
Tonio Pflaum	mixed	25,000/month
La Prensa	private	100,000/month
Barricada	private	150,000/month
El Nuevo Diario	private	1000,000/month

*Capacity refers to the number of copies of a book of 150 pages, 8 and a half by 17 inches that could be printed per month.

"Companic" is the acronym for Compania Papelera Nicaraguense.

The last three listed presses are newspaper presses in Managua.

Source: Lic. Salvador Cruz, Tonio Pflaum Press

All the above presses have trained personnel and are able to work with a variety of colors and layouts. In the past, at least three of the above have worked for MED: Barricada, Companic, and Tonio Pflaum. (Appendix VII-1 presents information on Tonio Pflaum and other MED owned businesses.)

From the foregoing, it is possible to conclude that Nicaragua does have a press capacity that could handle the production of textbooks and other instructional materials, and most of the capacity is in the private sector.

D. Regional and Local Variations

As mentioned previously in this chapter, ethnic minorities in Nicaragua are entitled by law to have curricular materials in their language and reflective of their culture. The plan to date has been to either deliver the new textbooks intact, or to translate them, as in the case of the Miskitio.

Bilingual education personnel have little formal training in methodology for either first or second language acquisition. Although there is a high degree of enthusiasm and cohesion in the unit, their lack of knowledge of language instruction, the limited coverage of their program, and lack of budget has limited the unit's effectiveness.

E. Evaluation and Current Student Assessment Procedures

Evaluation in the primary schools is governed by the by-laws under Title V of the primary education regulation. They call for a "permanent" (continuous) evaluation system consisting of three kinds of testing: *controles sistematicos* (Systematic quizzes), *pruebas parciales* (Periodic tests), and *pruebas semestrales* (semester exams). These evaluations are made up by the classroom teachers in the case of the classroom quizzes, and by groups of teachers in the same school with respect to the periodic tests. The semester exams are created at the regional office from input given by the education specialists.

The by-laws spell out in detail what scores are to be used in these evaluations. In the quizzes the scores are from 0 to 10, and there should be at least three of these every two months. The period tests are to be given twice in each semester, and semester exams are given at the end of each semester. The scores from these exams, averaged over the semester, determine the final semester grade in each of the major subjects. Further, the by-laws spell out that the bimester exams will count for 75% of the semester grade and the semester exam 25%. However, no consistent criteria have been established to determine what test scores mean at a national level.

A child must score at least 51 as the average final semester and end year score to pass the grade. Children who fail in the first semester are permitted to continue in the second semester, but only children who have passed all subjects at the end of the school year may be promoted to the next grade. (Arts. 96 & 97) Children who fail three or less

subjects have the right to take special makeup exams, and those who have a failing average over the two semesters in more than three subjects, or those who fail any exam in the make-up exams, will fail the grade and not be promoted to the next grade. (Art. 101).

Although this seems like a great deal of formal testing for children of primary school age, teachers interviewed suggested that they did not follow the regulations to the letter, and that many of the exams and controls in the lower grades were oral and informal. Teachers viewed examinations as a necessary evil and there was no evidence that exams were used by teachers as a diagnostic tool.

F. Instructional Materials Available in the Classroom

In assessing the instructional materials necessary to promote learning, it is necessary to begin with a broader examination of the general conditions under which learning takes place. A minimum infrastructure is necessary to take advantage of material inputs related to instructional quality.

Team members visited a total of 23 schools in the six different regions. With only one exception, these schools were in precarious physical condition. Doors and windows had been removed and in many schools roofs were full of holes.

The physical state of the classrooms are precarious. There are no lights or they have been stolen. Walls are unpainted. Window panes are broken and many have dangerous edges that need to be removed. Rooms are well ventilated because of open spaces on both sides of the rooms. This, however, contributes to high noise levels within the classrooms. Blackboards are pitted and chipped, as they are made of wood.

Few pictures, charts or instructional aids of any kind were observed on the walls. Large numbers of children either stand or sit on the floor because of a lack of desks. Those desks that do exist are made of wood with a writing surface attached to the right side that makes group work difficult. Few children have more than a single notebook and pencil and in many schools teachers brought extra supplies to be loaned to students each day.

G. Instructional Delivery in the Classroom

The school year is divided into two semesters, and the law calls for a minimum of 160 instructional days. In addition to these days, there is planning time, school enrollment time, and other non-instructional activity days. Vacations are scheduled for holy week, the breaks between semesters, end of year activities, and other special days. A five-hour school day is required.

A series of school visits, identified an extreme emphasis on math and Spanish. During unannounced visit to 23 schools and 40 classrooms, math or language activities

were underway 90% of the time. The reproduction that follows illustrates the focus on this subject matter for a multigraded classroom in Matagalpa.

Table 26: Multigraded Classroom Schedule

7am - 7:15 opening activities	9:15 - 9:45 Math 3
7:15 - 7:45 Spanish 2	9:45 - 10:15 Recess
7:45 - 8:15 Spanish 3	10:15 - 10 45 Math 4
8:15 - 8:45 Spanish 4	10:45 - 11:15 Social Studies
8:45 - 9:15 Math 2	11:15 - 11:45 Art/Music

The principal learning activities observed in all classrooms were those of large group, and seatwork. In fact, no other activity except recess was observed. Large group consisted of teacher-directed lecture using the blackboard for presenting material. These activities made up about 50% of the total learning activities observed. Transition time made up about 8% of the instructional time, with seatwork accounting for the remaining time during observation periods.

In seatwork there was a significant amount of time lost to waiting for teacher input, as assignments were generally finished while the teacher went around the class providing individual feedback. Thus, children sat conversing or playing until the teacher reached them. Large group held students' attention better than seatwork, but these activities gave them little opportunity for direct interaction with the teacher. The following examples illustrate the involvement of children with the ongoing activities of the classroom.

11:25 am The teacher is in front of the first grade class holding open a textbook. Jorge, a small boy wearing a tattered red tee shirt watches intently from the last seat in the second row. She says "Pongan Atención" holding the book a little higher "Qué es esto?" Several children say "Un libro". Jorge doesn't repeat but continues to watch. The teacher repeats "Un libro y en el libro qué hay?" Several children answer "Un libro". Jorge mouths the word "libro" as the Teacher says "Letras, verdad?" Some children repeat and the teacher then says "letras" three times with most children repeating after her. Jorge, however, does not repeat as he has just dropped his pencil and is searching madly for it under his desk. Teacher asks " qué más hay?" Again some children say "libro". Teacher says "Sí, pero hay líneas". Jorge watches but doesn't repeat. The boy next to him says "Abrahan se durmío." Jorge turns to look at the boy identified as sleeping and laughs. 11:29 am

11:02 am The fourth grade teacher is at the board asking "Una centena, cuantas decenas tiene?". She repeats this four times as children respond "cinco, diez".

Sonia, a tall girl who looks about 15 years old, does not repeat with the others. Rather, she sits tracing with her finger over flowers that she has drawn previously in her copybook. She looks up at the teacher who is now putting an exercise on the board. Sonia continues to look around as the teacher writes. She notices a second grader who has pulled his desk back away from his classmates. She then grabs the shoulder of the girl who is her neighbor and says "Mira", pointing to the boy. The girl looks, then both girls turn back toward the teacher. Sonia turns to the girl behind her and says "Prestame el lapiz". The girl gives her a small pencil and she begins to copy what the teacher has written on the board. 11:08 am

Interactions consisted almost exclusively of the teachers modeling correct responses either through questions which accounted for about 50% of teacher's utterances during the observation periods or explanation (28%). Directives made up slightly less than a fourth of teachers' utterances in each classroom. Only four examples of feedback was observed during observation in all classes.

Children's utterances were almost entirely devoted to group responses to teachers in large group and commands or questions to peers during seatwork. Both the constant repetition of large group and simple copying exercises of seatwork led children to lose interest. Thus, time on-task was low.

H. Conclusions and Recommendations

1. Conclusions:

The Curriculum Planning Bureau has a number of experienced classroom teachers who have used instructional materials and have some sense of materials design. They are at present working backwards in attempting to adapt the curriculum to the new AID-financed textbooks rather than developing materials for a curriculum. This results from a lack of training in both the systematic development of modern instructional or learning materials and in automated technology.

The new AID-financed textbooks are colorful and grade level appropriate. However, the content is very traditional and is based on information acquisition rather than on inquiry and problem solving. Language books are not organized around modern whole language acquisition principals, and several of the books are outdated. The books could better reflect Nicaraguan reality, especially in their portrayal of nuclear families with men as the breadwinners.

Nicaragua has the capacity to print new textbooks through a number of different private sector printers, including one in which the MED is presently the major stock holder.

Active student participation and student time-on-task are minimal in Nicaraguan primary classrooms. Observations showed teacher-centered instructional activities dominated the daily schedule. Even the few available instructional aids, such as the blackboard, were used ineffectively.

The physical conditions of many schools increase the difficulty of effective instructional delivery. Many children don't have desks, lights are lacking, roofs leak during the rainy season, and chalkboards are scarred, chipped, broken or too small.

2. Recommendations:

The MED should begin to create the capability within the Curriculum Planning Bureau to develop its own books and learning materials. The consumable nature of some lower grade books for the Nicaraguan school environment, will require the restocking of some of the current books for at least another year if levels of textbook availability are to be maintained. Thus, the MED should investigate the feasibility of donor funding for 1992 textbooks.

The Bureau should consider the present textbook program a transition and should begin at once to plan a new program and new instructional materials which would be ready by 1993. This will require training in curriculum development, instructional design, word processing and desktop publishing as well as appropriate reference works and equipment.

In order to stimulate local production, the MED should investigate the feasibility of printing locally developed textbooks in Nicaragua.

Teachers should be trained in classroom management techniques and manipulation of existing instructional aids, including use of the blackboard. This could be done through a series of single concept workshops which take advantage of the existing in-service training system.

Classroom renovation, especially the provision of student furniture should be a high priority for the MED. Such furniture might be in the form of modular desks and tables which would encourage small group work and peer teaching activities.

VIII. TEACHER TRAINING

This chapter examines pre- and in-service teacher training programs in Nicaragua. There are about 18,000 primary school teachers in Nicaragua, of whom at least 7000 are unaccredited. Accrediting is done through 12 Normal Schools which provide a secondary-level professional education for primary school teachers. The schools train about 400 new teachers a year and accredit up to 1500 working teachers through in-service secondary education programs. At current levels of teacher production, between 2000 and 3500 new teachers beyond those that can currently be prepared in the Normal schools will be needed to meet student demand in the 1990s. In addition, it will take between five and ten years to accredit teachers currently in the school system.

The quality of Normal School training is poor. Teachers are trained in traditional non-student based methodologies. The Normal schools also lack curriculum guides, teaching materials, libraries, and trained staff. There is little coordination between the Normal schools and the MED in-service professional enhancement program. Difficulties in budget and transportation have made the MED in-service program almost non-existent.

The MED should stimulate alternative short-term strategies which include establishing performance-based criteria for accreditation of experienced teachers, tying incentives to accreditation and subsequent teaching performance, and promoting in-service municipal level training using local resources.

In the long-run, the Normal Schools should be converted into pedagogical centers of excellence and teacher support. These centers would provide pre-service training and would coordinate in-service training and communication opportunities for teachers.

A. Background

Perhaps the central focus in the educational field during the period of the FSLN government (1979-1990) was in the expansion of the system in order to reach the most remote regions of the country and to provide a universal education for all children, regardless of economic origins. This was done with the support of several European countries, Cuba and of a number of United Nations agencies, but within the policies developed by the FSLN government.

As shown in Chapter III: Overview, access to education was greatly increased. In 1978 the overall primary school enrollment was 369,640 and this reached 534,317 by 1984 terminating with an estimated enrollment in 1990 of 632,882. The increase in rural areas in the 12 year span was 53%, from 127,609 to 267,956, while the urban zones moved up 34%, from 242,031 to 364,926. This reflects the strong concentration of actions in rural regions but it also helps to explain some of the problems which the previous government had in building schools in the more remote parts of the country and in training teachers to work in those areas.

The number of primary school teachers almost doubled moving from 9,986 in 1978 to 18,402 in 1990. However, inasmuch as this numerical expansion came at a time when financial constraints were an overriding concern because of the war, the economic blockade and other internal difficulties, it was often at a cost of placing non-accredited teachers in the classroom.

Four categories of primary school teachers were utilized during the FSLN government. These included:

1. The regular accredited teacher, a graduate of the Normal Schools (9 years basic education plus 2 years specialized training, plus one year of social service).
2. The young aspiring teacher who was doing his/her year of social service in the rural communities, normally serving in the classroom in the most remote regions.
3. The "empírico" or non-accredited teacher who was usually a graduate of six years of primary school, sometimes with a bit more of formal training.
4. The community volunteer or "maestro popular" who mainly worked with adults but also assisted the assigned classroom teacher, and, in some cases, conducted the classes. In that same category were the brigades of secondary school graduates who volunteered to work 2 years in the rural areas.

The pressure to use more volunteers and incorporate non-accredited teachers into the primary school mounted as a means of meeting the expanding enrollments. What started out as a stop-gap measure soon turned to be the norm for the system. Non-accredited teachers and volunteers became an institution, indeed a way of meeting educational demands with popular programs utilizing community resources.

In addition, with many of the young men away at war or in the reserves, the great majority of those who entered the teaching profession, accredited or not, were women. This added further to the traditional concentration of women as primary school teachers so that by 1987 the percentage of women at that level was estimated at 77% in one MED document.

As the peak 1979-82 primary school enrollment expansion of almost 10% a year leveled off in 1983-89 to an annual rise of under 3%, efforts were made to improve the quality of the educational offering through in-service training courses and the development of a new more localized curriculum focus. But at the same time, beginning teacher salaries declined sharply reaching a current estimated US\$50 a month. And, with an increase in pressures for national defense, many young men and women between 16 and 24 were in the army or the "Contras" in the period between 1987-89. All of these factors deprived the system of its capacity to retain trained teachers. Although statistics are hard to accumulate on teacher turnover, Director of Primary Education in 1989

estimated that the great majority of primary schools had at least two different teachers in a classroom during the school year, some had as many as three and four. A very high percentage of these were untrained.

The Normal Schools were no longer able to meet the demand of the system. For example, graduates of the then 13 Normal Schools in 1988 totaled around 400. At the same time, roughly 8%, or about 1,400 teachers were leaving the system for reasons of retirement, low salaries, and the war. During that same year, some 6,868 primary school teachers already within the system were enrolled in the "professionalization" program. In 1989, that number dropped to 6,263 but it increased in 1990 to 7,050. This year, however, the number seems to have dropped again, in part perhaps because of the difficult economic situation.

This is not to suggest that the FSLN government was not concerned with improving the quality of teaching. The establishment of 52 "nucleos" for the training of non-accredited teachers, the increase in the number of Normal Schools from five to 13, the establishment of a mobile Normal School in Juigalpa to reach out to where the teachers lived, and the Saturday author's workshops for teachers are examples of the continuing concern. However, the addition of over 250,000 primary school children in a 10-year period made meeting demand a never ending struggle.

Emphasis in the UNO government, in addition to the obvious change in doctrinal orientation, is upon the consolidation of the quantitative advances made in the 1980's and the improvement of the quality of education. This is clearly demonstrated in the Guidelines document of the UNO government (MED, July 1990). Several elements from this policy document later reappear in the discussions on pre- and in-service training actions.

The majority of the specific guidelines are qualitative, aimed at improving the quality of teaching and the quality of learning. While primary school expansion is still a goal, it is now part of a larger assemblage of ideas.

Almost all educators agree that in order to improve the quality of education, the quality of the classroom teacher must be improved. With current estimates wavering between 38-77 % of all primary school teachers falling in the "non-accredited" category, this certainly looms as a challenge facing this government.

B. Teacher Supply and Demand

As shown in Chapter II, a 2.8% increase per year in the primary school population is expected over the next decade. This will add over 207,000 children to the system. Using the current actual ratio of 34 students to a teacher reported in MED statistics, an estimated 6088 new teachers will be required to meet this demand in the next 10 years. Even using the more conservative student/teacher ratio of 45:1 which is found in MED planning documents, 4600 teachers will be needed.

In addition, there is a large out-of-school population which the anecdotal information presented in this assessment (see Chapter X) suggests may be returning to school in substantial numbers with the termination of armed conflict in Nicaragua. If educational quality improves and students advance through the system at better than the 22% currently reaching sixth grade, more teachers will be needed to provide services at the higher grades, thereby increasing demand.

Currently, the normal schools are producing an average of 400 graduates per year. No studies were found at any of the Normal Schools as to the number of graduates who actually went into the teaching profession. Even estimates were hard to establish. Most interviewees agreed that students in the one-year post secondary Plan 3 course were susceptible to other opportunities. These young people originally wanted to enter the university, and perhaps still maintain those hopes, using the Normal School as a trampoline to re-enter the competition for the university. If this is true, it is a serious problem for the present and immediate future inasmuch as those under Plan 3 will make up an estimated 60% of the 1991 graduates of the Normal Schools.

Given these estimates, the 400 graduates are not the true number of accredited teachers available to the primary school system. Assuming that 10% of Normal school graduates actually enter the teaching profession, would provide between 250 and 350 teachers per year. As can be seen in Table 27, the number of graduates does not greatly vary over the past decade. All of these figures suggests that over the next decade there will be a deficit of trained teachers to meet new demand of between a low 2000 and a high of 3500.

A second aspect of the teacher supply question is that of teacher turnover. It is difficult to measure primary school teacher turnover in Nicaragua, especially given that the last years of one government and the first year of another are rather atypical. There are three aspects to consider:

1. The number of teachers who leave the system at the close of one year and do not return the following, for whatever reason.
2. The number of newly trained teachers who enter the system, as Normal School graduates.
3. The number of non-accredited teachers who remain within the system and receive their accreditation through the in-service programs.

Table 27: Normal School Enrollments and Estimated Graduates

Year	Total Enrollment	Estimated Graduates
1982	3,779	377
1983	3,198	319
1984	3,826	382
1985	4,603	460
1986	4,537	453
1987	4,243	424
1988	3,688	368
1989	2,687	267

In order to combat the problem of the high percentage of non-accredited teachers in the system, it is evident that the numbers in the second category must exceed the numbers in the first. This is not happening at the present, creating what could be called the "entrance problem." The numbers available between 1988 and 1990 are shown in the following table. Even assuming that all Normal school graduates are entering the system, the deficit of trained teachers is increasing. This puts an additional burden on the professionalization program providing Normal school equivalency.

Table 28: Relationship Between Normal School Graduates and Primary School Teachers Leaving System

	1988	1989	1990
Total Number of Teachers	17,283	18,160	18,402
Teachers Who Left System	1,400	1,550	1,100
Normal School Graduates	400	400	400
Deficit	1,000	1,150	0

This is only part of the picture. The "internal problem", the accreditation of those already working as teachers, the third issue mentioned earlier, pretends to bring all teachers to a minimum accreditation level, that of a Primary Education Teacher. Official statistics in 1990 indicated that some 6,994 primary school teachers (about 38%) still did not have their accreditation. These figures are disputed by most educators, some estimating that as high as 77% of currently active primary school teachers are non-accredited. That would be over 14,000, double the official estimate.

The following table, while speculative, presents a projection of the possible amount of time it would take to accredit all primary school teachers indicated in official statistics for 1991. There are two highly debatable assumptions which underlay this projection.

- That no new non-accredited teachers will enter the system, and
- That in-service training programs in the "nucleos" and the Normal Schools can sustain the current accreditation of about 1,500 teachers a year teachers not indicated in this table.

Table 29: Projected Time Non-Credentialed Teacher Training, 1991-1995

Year	Non-Credentialed Teachers	Number Trained	Remaining Deficit
1991	6,994	1,500	5,494
1992	5,494	1,500	3,994
1993	3,994	1,500	2,494
1994	2,494	1,500	994
1995	994	994	0

What might be concluded from the above table is not that it will take until 1995 to eliminate the problem of non-accredited teachers, but that it will take at least five years to eradicate that problem once MED is able to hire only accredited teachers to replace those leaving the system and fill the new vacancies. The number of years exceeding this estimate will depend upon the priority given to the professionalization program and the number of Normal School graduates who actually do enter teaching. This estimate does not take into account the 4500 - 6000 new teachers mentioned above, who will be needed to meet increased student demand.

Up until now the discussion on increasing the quality level of the teacher has centered upon accreditation as the chief criteria. We know, however, that many of the teachers who do not have the Primary School Teaching certificate are very good teachers. The inverse may also be true. The announced plan of this government is to evaluate the teachers, to reward those who are rated high and to take actions with those rated low. This planned evaluation will complement the accreditation approach already mentioned.

Thus far, two indicators of quality have been mentioned: accreditation and teacher performance evaluation. There are some teachers nearing the end of their service, others who are injured or incapacitated and return later to teaching and perhaps even certain isolated one-room school teachers unable to receive the in-service training who

need special consideration. Shortcut solutions are possible. Some technicians interviewed, for example, suggest that those with over 10 years of experience should be given a two-month course to provide their accreditation.

All educators interviewed agreed that the main reason teachers have for leaving the profession are low salary scales, the same reason given by graduates for not entering teaching. And the more general education the young person has, the better his chances of finding alternative work with a higher salary than that of the teacher.

C. Pre-Service Training

1. The Normal School Program

Overall, the Normal School is a non-university preparatory program to enter the teaching profession. This is important to consider when comparing the teacher to other professionals. The graduate of the regular program of the Normal School will typically have 11 or 12 total years of schooling.

One of the early tasks set by the UNO government is to establish a new profile for the primary school teacher. Draft ideas have been made although no composite is yet available. Five main categories are considered: knowledge, pedagogical techniques, cultural, moral and scientific attributes. Among the new pedagogical techniques are:

- Ability to efficiently orient the educational process.
- Pedagogical work directed toward creativity and flexibility in teacher.
- Dominate evaluation techniques of teaching-learning.
- Guide the student's interests so that they coincide with the social and economic needs of the country.
- Promote cultural development in the community.

In keeping with the stated goals of the UNO government, there is a strong stress on moral values and civic responsibilities for the primary teacher.

This profile will have to be refined and discussed with the Normal Schools and primary school teachers in as much as it serves as a description of the graduate of the teacher training centers and of the primary school teacher.

There are at present three levels of students who enter the 11 Normal Schools with regular programs:

- Those who have finished the six-year primary school program. They take five years at the Normal School, three of general or secondary studies and two of specific training, to complete their 11 years of school. This is called Plan 1 and typically enrolls about 50% of the 2200 in the Normal Schools. They leave with the title of "Primary Education Teacher."

- Those who have finished the nine-year Basic General Education program. This is Plan 2 and about 25% are enrolled in this course. They need two years to receive their title of "Primary Education Teacher."
- The remaining 25% are students who have already finished the secondary program and decide belatedly to enter the teaching profession. When finished, they have both the Secondary or "Bachiller" certificate and the title of "Primary Education Teacher." This is Plan 3.

The following table presents the initial enrollment of students at the different Normal Schools, but information concerning the Plan which they were pursuing was not available. In general, students enrolled in the Normal Schools near rural areas and with internship facilities have superior numbers in Plan 1, while those in more urban areas have more in Plans 2 or 3.

Table 30: Normal School Enrollment in Regular Courses

Region, City and Normal School	Total Enrollment ³
I. Estelí: Román Esteban Toledo	341
I. Ocotal: José Arturo Calero	181
II. León: Guadalupe Moreno	189
II. Chinandega: Darwin Vallecillo	120
III. Managua: Alesio Blandón Juárez	359
IV. Jinotepe: Ricardo Morales Avilés	285
IV. Rivas: Enmanuel Mongelo	-
V. Juigalpa: Gregorio Aguilar Barea	390
VI. Matagalpa: José Martí	209
RAAN Puerto Cabezas: Pedro Aráuz P.	100
RAAS Bluefields: Ocho de Octubre	70
ZE-3 San Miguelito: Mélida Anaya	80
Totals	2,324

There have long been hopes in Nicaragua of raising the Primary School Teacher Training Programs to the level of higher education, or Superior Normal School, as in most of the Latin American countries. In some ways, with Plan 3, this has already been accomplished with a secondary school graduate entering the Normal School for the first time. The next step is to convert the Plan 3 program into a higher education course. The main drawback to doing this almost immediately is financial rather than technical in

³ These are estimated enrollment figures and have already increased in at least Managua, Ocotal and Estelí.

that the low level of teacher salaries does not serve as an attraction for the secondary school graduate. Of course, the conversion of the Normal Schools would also mean a considerable up-grading of their human and physical resources, something which could be planned over a five-year time span.

In the last five years, the role of the Normal School, in the majority of cases, has greatly expanded. Most do both regular and accreditation courses. One has only accreditation programs. Some are active in the recruitment of prospective new teachers. Most are involved with the Regional Delegations and a few with the Municipal Delegations in the technical supervision of teachers in the schools. One Normal School has even taken upon itself the task of improving the physical condition of the schools in its area with "pedagogical operations." First they send one Normal School teacher to a primary school to make a precise list of needs. A few days later, about 40 Normal School students with their teachers go to the school with paint brushes, tools and didactic materials to work for a day in the improvement of physical and technical conditions for learning. They leave behind a renovated school and motivated teachers with new materials and ideas. This is typical of the professional spirit and dedication observed at the seven Normal Schools visited, once considered a key area for FSLN activity.

2. The Normal School Curriculum

The new government has developed a curriculum plan for the Normal Schools, which does not at this point greatly differ from the previous plan. The curriculum plan is a traditional one, with strong emphasis on the "basic subjects". It is divided into semesters and the particular Plan in which the student is enrolled, determines the amount of time devoted to pedagogical elements.

In Plan 1, the first three years are very similar to seventh, eighth and ninth grades of the general primary program, with a heavy stress upon the basic subjects. There is a large class load and students have up to 13 different subjects in a single semester. (For details see Appendix VIII-1).

There are 42 different subjects in the five years of Plan 1, 34 in the two years of Plan 2, and 27 in the single year of Plan 3. Pedagogical courses begin from the very first semester of Plan 1, even though the student would have an average age of 13 or 14 at that time. This is a extremely early indoctrination to the teaching profession. In Plans 2 and 3 the teaching courses also begin in the first semester but students are 16-17 or 18-19 years of age, respectively by that time.

The percentage of time the student spends studying basic subjects and those related to courses of a teaching nature in each of the three plans is shown in the following table.

Table 31: Teaching Time per Semester Devoted to Basic and Related Subjects in Three Normal School Plans.
(figures are in percent of time)

Plan/Area	Normal School Year and Semester									
	1-I	1-II	2-I	2-II	3-I	3-II	4-I	4-II	5-I	5-II
Plan 1										
Basic	65	65	73	73	63	60	53	53	48	0
Teaching	35	35	27	27	37	40	47	47	52	100
Plan 2										
Basic							54	38	45	48
Teaching							46	62	55	52
Plan 3										
Basic									0	5
Teaching									100	95

Note: For the purposes of this table, "basic subjects" are defined as those which would be included in the regular primary general or secondary programs. All subjects which give information or teach skills needed in Teaching are in the second category.

There are several interesting innovations in the program. First, in each of the subjects a great amount of time is scheduled for practical application. Second, most of the final year of the program, depending upon the Plan, is devoted to practice teaching in the schools. There is some complaint about the guidance provided by the local "Master" teacher in these situations. In part, this is the reason the new government proposes to establish demonstration schools of excellence throughout the country.

The real innovative aspect of the teacher training program is the year of "social service" after the completion of the regular program. During this period the student gives a year of his or her life, with very limited remuneration, to the improvement of the country, especially in the poor marginal urban and rural areas. At the same time a final paper or thesis on the student's experience at the Normal School. Only upon presentation and acceptance of this thesis is the Primary School Teacher's Certificate received.

This prolongs the period of training for the student, but at the same time it enables him/her to become acquainted with and work in the rural communities. It also serves the regions by filling a remote rural school with a nearly-accredited teacher. Remuneration during this period is roughly equivalent to that of a beginning non-accredited teacher. The students are selected and assigned "places" in the local community, which assigns him/her specific tasks. However, in 1991 because of the tight financial restrictions on the government, not enough places were available for the

previous year's graduates and there is some doubt as to what should be done with the students unable to secure one of the limited openings. These are really trained teachers but their entrance into teaching as an accredited professional is being blocked because of conditions beyond their own control.

3. Inventory of Resources in Teacher Training Institutions

Just six of the 12 Normal Schools own their own facilities. The remainder rent or are provided buildings by private organizations. The Normal Schools which do not have a building are in León, Rivas, Matagalpa, Pto. Cabezas, Bluefield and Sn. Miguelito. These are, in general, the smaller and the newer of the training institutions with a total regular enrollment of 578 (25%) of the 2,324 estimated 1991 students. They do, however, remain important for the in-service training in the largely rural, geographically isolated areas of Nicaragua. In all six cases, they have more than double the enrollment in the accreditation courses than in their regular courses.

All of the buildings visited exhibited infrastructure needs. The existing Normal School buildings in Estelí, Ocotol, Managua, Jinotepe, Chinandega and Juigalpa are all between 10-30 years old and show signs of deterioration for lack of maintenance. While no composite studies were found, first-hand observation revealed the need for fixing roofs, for painting, for rebuilding some rooms, for improvement of hygienic facilities and for general infrastructure improvement. Little maintenance has been done in recent years. The directors of the Normal Schools were asked to list their most urgent needs and these needs were consistent with those observed. (See Annex VIII-2)

Overcrowding is also a problem. Hallways were taken over for dormitory space, increasing the possibility of the spread of communicable disease among students. There is no easy solution for this problem. Some countries permit students to take up residence in the local town, but this seems impossible in Nicaragua because of the very young age of the students and the precarious economic situation they face. Other countries have created centers close enough to the majority of the students so that they can commute. The great distances and the inadequate transportation system in Nicaragua would rule this out in most cases. Another variation which could be applicable in Nicaragua is a type of mobile teacher training program, combining a variety of distance teaching methods with occasional face-to-face workshops given by Normal School teachers. This would be particularly useful in the more remote regions of the Atlantic Coast, the Rio San Juan area and the higher mountain zone.

The didactic materials at the Normal Schools are antiquated. Laboratories and laboratory equipment still exist for science classes in the larger Normal Schools, but most are leftovers from the 1950's. The libraries have a comparatively large number of older volumes, few from the last two decades. Facilities for sports, music and art have long since been taken over for regular classroom purposes or for internships. Although there are some school gardens which produce fruits and vegetables for student consumption, their presence is the exception rather than the rule. Machines for the reproduction of materials: mimeograph, photocopiers, computers and the like, are almost non-existent.

Television and video tape recorders, either for instructional purposes or the entertainment of the interns, were limited in number.

A special word should be said about the libraries. The budget for the purchase of books in the past decade has been limited at best and the selection often made along ideological lines. This means that the teachers of the future teachers and student-teachers themselves do not have access to recent information about advances in sociology, psychology, learning theory, classroom organization, the production of didactic materials, to say nothing of the basic subjects. During this assessment, RTAC was in the process of providing some selected technical books to the Normal Schools.

Overall, the estimated number of teachers this year in the 12 active Normal Schools was 540, with about half of them involved only in the accreditation programs. To be certified, a Normal School teacher must have university studies and a certificate of Professor of Secondary Education or a *Licenciado* in Education. While no national figures on the number of non-accredited teachers exist, in the seven Normal Schools visited, 48% of the teachers were not certified.

Even among the accredited teachers at the Normal Schools, there is a need for in-service training. This year, because of budget cutbacks, none will be held. The Section of Pre- and In-Service Teacher Training had programmed workshops for Normal School teachers on the teaching of mathematics, Spanish, calligraphy, orthography, natural sciences, social sciences, chemistry, and physics as well as courses on administration, curriculum, economics and accounting. Now, each Normal School is being asked to program internal workshops, utilizing their own teachers. The same is true of the primary school technicians at the municipal level.

4. Selection of Students for Teacher Training Institutions

Some Normal Schools do active recruitment, circulating to the primary schools each year to talk with sixth grade students. But the more effective method for recruitment of students in rural areas is through the professionalization courses when the primary teachers establish contact with the Normal School teachers. The primary school teachers serve as recruitment agents for the Normal Schools upon their return to classes. However, the more critical group for recruitment is the secondary school graduate and here no Normal School reported actions.

Because of the widely held view that the primary school curriculum is urban oriented, the FSLN government made a concentrated effort to recruit young people from rural areas into teaching. In a society dominated by agriculture, this policy has paid off. In 1989, it was reported that 90%, or 2,418 of the 2,687 students came from rural areas. Almost all of those in the internship program are from rural communities.

Although no economic data were available, it is evident that the majority of the young teacher graduates in recent years have come from lower economic strata. In all of the Normal Schools visited, for example, efforts were made to secure special monthly

quotas from parents, but in only one case was this possible. This ratio of students from lower income families might change this year and in the future with the increased enrollment of secondary school graduates.

While precise statistics were not available, it was evident from the visits to the classes at the Normal Schools that some 80-90% of the students were women. This is in keeping with the official statistics at the primary school level for 1991 which indicated that 85.6% of the teachers were women.

In summary, the Normal School student tends to come largely from rural areas, from the poorer homes and is mainly female. Entrance requirements are minimal and there is no evidence to indicate the level of previous academic achievement of those accepted.

5. Employment Outlook for Graduates of Teacher Training Institutions

Most of the Normal School officials interviewed felt that there is a need to do follow-up studies on the destiny of their graduates, but none have done it as yet. They did indicate that at least three factors were critical in the moment of decision for the graduate of the Normal Schools:

- **The mystic factor.** The higher the amount of mysticism or vocation they individually had for the profession, the officials felt, the greater the chances that the graduate would go into teaching.
- **The financial factor.** The existing beginning salary for teachers as compared to what they could earn in some other business is a critical factor.
- **The unemployment factor.** The higher the overall unemployment in the country, the more likely that graduates would enter the teaching profession.

Looking at the current situation, only two of the three factors can be measured. How many young people have a vocation for the profession is hard to quantify. Nevertheless, in 1991 the financial factor was quite low, perhaps no more than US\$50 per month equivalent. In addition, with the relatively high cost of living in Nicaragua that would leave a beginning teacher at or near the subsistence level.

Despite all of this, first year enrollments at the Normal Schools were higher in 1991 than in the previous year and a visit by team members to a rural Matagalpa area revealed that 370 persons applied for a teaching position in a district that had a single opening in one school. In addition, many educational officials interviewed felt that more Normal School graduates were going into teaching this year simply because they did not have any other alternative. As indicated in other sections of this assessment, unemployment and under-employment for 1991 was estimated at 40%, making teaching an immediate, although perhaps temporary choice.

There is an additional factor. Once a non-certificated teacher has obtained his/her position as a primary school teacher it is difficult to take it away, especially if he/she has enrolled in the certification or professionalization course. While it was said a number of times that credentialed primary school teachers who wanted to teach could not find a position, it was hard to substantiate if or why such a situation exists. What is more, if, as in many municipalities, the teacher signs an agreement to continue his/her accreditation course as a condition of employment, then it becomes legally difficult and financially unsound to hire a trained teacher at a higher salary. Once again, the financial situation colors decisions.

D. The In-Service Training Program for Non-Accredited Teachers

The so-called "professionalization" program has much in common with the Normal School program. It has the same three categories of students under Plans 1, 2, 3, but in this case they are called Plans A, B, and C. These courses are sometimes taught by Normal School teachers. The curriculum is basically the same as that given at the Normal Schools.

However, there are also differences. First, the "students" are non-accredited teachers who are actively teaching and may vary in ages from 15 to 55. Second, the program is held on Saturdays and during vacations extending up to six years in Plan 1. There is, however, some discussion of reducing the period to five years. Third, most classes are given in one of the estimated 25-30 currently active *nucleos* in municipalities.

It is difficult to generalize about the *nucleos*, the accreditation programs and their curriculum. A national standard is set, but this varies greatly according to the availability of teachers, their training and the facilities. Typically, the *nucleos* are primary school education centers or private facilities on loan.

Scheduling adaptations are also made. Officially, sessions may be held once a month, twice a month, monthly or bi-monthly, if the overall number of classroom hours are maintained. Thus, each region makes adaptations fit the local circumstances. In Region V, for example, instead of working every Saturday, a calendar of "meetings" is set up with the participants. In this, they agree to meet for four intensive six-day periods during the year, periods in which their primary school classes are closed. In return, they schedule these classes for 20 Saturdays during the year. The Normal School teachers, who teach the accreditation classes, do the same with their regular Normal School students. In addition, the intensive summer course of one month is also set. This seems to have been effective, inasmuch as retention rates in the four *nucleos* working with this plan varied between 82-99% in the 1986-90 period.

A new time program has been proposed by the Section of Pre- and In-Service Training of MED. This plan will eliminate sessions during the regular year and concentrate training in a 10-week vacation course. Several Normal Schools have already accepted this plan for January-February 1992. The plan has the additional advantage of

utilizing the Normal School internship and luncheon facilities, thus maintaining costs at a minimum.

Because of the situation previously described of at least 7,000 untrained teachers in the country, the courses for non-accredited teachers have much larger enrollments than those of the regular Normal School programs. The following table indicates enrollments in 1990-1991:

Table 32: Enrollments and Courses for Non-Accredited Teachers, by Regions, 1990-1991

Region	Professionalization Courses - 1990	Regular Normal School Courses - 1991	Totals
I	1,111	522	1,633
II	1,467	309	1,776
III	1,239	359	1,598
IV	1,149	285	1,434
V	1,097	390	1,487
VI	1,449	209	1,658
RAAN	600	100	700
RAAS	203	70	273
ZE-3	100	80	180
Totals	8,415	2,324	10,739

Note: RAAN and RAAS are the northern and southern autonomous zones on the Atlantic Coast. ZE-3 is the special zone along the Rio San Juan. Regular enrollment figures are estimates.

E. MED In-Service Training Programs

1. Existing Programs

Until now only the "professionalization" courses have been mentioned as examples of in-service training. There exists, however, a whole system of in-service training by levels (pre-primary, primary, special, secondary, adult) with technicians at the national, regional, and municipal levels. This type of in-service training comes under the jurisdiction of the *Dirección General de Educación* or General Bureau of Education of MED. This Bureau delegates responsibility to each of the Sections specifically

responsible. In this case the Section of Pre-School, the Section of Primary, and the Section of Pre- and In-Service Training all are part of that Bureau.

Each Section does in-service training, by level. The Pre-School helps train early childhood teachers, the primary school trains primary teachers, and so on. The Section of Pre- and In-Service training has responsibility for the in-service training of the teachers of the Normal Schools. Inasmuch as several Sections have the same clientele, there is a need for coordination.

In 1988-89, an effort was made to coordinate the two different types of in-service training done by the two Sections responsible, primary education and teacher training. This was called the *profesionalización-capacitación* program, but the results were short-lived. Beyond that, there has been little coordination between the various sections in terms of programming, course content, methodology and the use of materials.

All of the various Sections have technicians at the national, regional and municipal levels. In the case of primary education about 20 technicians are in the Section of Primary Education, each of the nine regions have five to eight technicians, and there are four specialists in each of the 148 municipalities throughout the country, a total of more than 600 specialists.

On paper, the system for the in-service training of primary teachers looks good. The difficulties lie in the lack of preparation of the technicians at the municipal, regional and even the national level, the lack of funds for carrying out the training, the lack of materials, and the shortage of transportation to move from the national to regional or regional to municipal or municipal to local levels. All of these problems make it virtually impossible to have in-service training in 1991.

The technicians at the national level are subject specialists. When workshops are planned, they tend to center upon specific subjects rather than on methodology, the psychology of learning or global approaches to teaching children. The national specialists give workshops to the regional technicians who in turn give workshops to the municipal specialists who have responsibility for training the classroom teacher.

The role of the municipal specialists is to provide technical supervision of teachers and to collect information from the school directors. In a visit by members of the assessment team to several municipalities, technicians reported that they were unable to make bi-monthly visits to each school because they often had to walk up to 25 kilometers just to reach the school. They often returned to the municipality at night, inasmuch as local people in dire economic straits were unable to house them, instead of staying overnight and moving on to the next school the following day. Some technicians reported that, because of these transportation difficulties, their visits were less frequent. National directors of the Primary Education Section added that, in addition to the mobility problems of the technicians, many also were non-accredited teachers who could offer little pedagogical support to the practicing teacher.

For 1991, the following workshops were planned in primary education:

- Initial meetings to explain new regulations, introduce the textbooks and present administrative changes.
- Workshops for the new directors and technicians in the regions.
- Pedagogical meetings with teachers at the regional and municipal levels to confront teaching problems, discuss the new reading-writing methodology, and to resolve specific issues they might have at individual schools.
- Organizational meetings with technicians and with teachers to plan workshops and technical inputs.

Very little of this will be carried out. Of the initial budget of C\$1,910,000 (about US\$382,200) for training in all categories (pre-primary, primary, secondary, special, adult) almost 40% has been spent upon initial training, especially that related to orientations in the use of the textbooks. As the huge programs for the training of non-accredited teachers come out of this same category, it would seem that there is little left for additional in-service primary education training.

In reality, this is similar to the situation of the previous year. The Primary Education Section did not sponsor these pedagogical meetings in 1990, in fact, all of the in-service training was carried out with funds from international projects. The same is likely to happen in 1991 and in the foreseeable future.

This leaves, in the case of primary education, over 600 technicians in the field with very little backup technical support and no real way to carry out in-service training for teachers at the regional or municipal levels. Their other function, that of technical supervision, is also greatly hampered by the lack of available transportation, especially to visit the most remote areas. With all these complications the municipal technician faces an almost impossible task.

When the courses are given, they are recognized and certified by MED. This provides a boost for teachers on their records and does lead eventually to salary increments. For the untrained teacher, the courses are not recognized as part of their accreditation program.

On average, despite the existence of the primary school network of technicians, this is an expensive form of in-service training. It is entirely face-to-face. No distance training methods have been utilized. Printed materials are reproduced in small quantities and used mainly for that specific training session.

In addition, until the 1990 MED structural reorganization, the curriculum and the primary school textbooks were either products of or approved by the Primary Education Section. The in-service courses followed those same guidelines, introducing the new aspects of the curriculum or the teaching materials in the training sessions. Now,

however, with the establishment of a special Curriculum Planning unit in the Bureau of Educational Planning, closer coordination will be needed in the organization of the courses and the selection of the materials.

In summary, the in-service training which has been available through the Primary Education Section in the past years has been limited, sporadic and mostly dependent upon outside funding. There is no reason to believe that this will change in the immediate future. What has been said for the primary school level also applies to the others: pre-school, special, secondary and adult education.

2. Evaluation Procedures for In-Service Courses

Evaluation remains a key problem in the training of teachers. At the Normal Schools, each teacher is left to set his/her own criteria for evaluation on a scale with a top of 100. In several of the Normal Schools visited, teachers were given indications that no less than 95% of the students should pass each course, but that is left to the individual school and the individual teacher.

The guidelines which do exist are inheritances from the FSLN government. They are the same evaluation suggestions that are given to the secondary school teachers. No separate indications are given for the education classes.

What is true of the Normal Schools is also true of the in-service training programs. Here, the evaluation criteria are even more diverse, inasmuch as teachers for these courses come from a variety of secondary schools and from a variety of Sections of MED. In the shorter courses, attendance is used as the main method of evaluation.

F. Impact of Organized Labor on Performance of Teachers

Interviews were held with teacher's union representatives of the *Asociación de Educadores de Nicaragua*, ANDEN (the FSLN union), the *Federación Nicaraguense de Trabajadores de la Educación y la Cultura*, FENITEC and the *Federación Sindical de Maestros de Nicaragua*, FSMN (two independent unions which support the position of the government). In each case, the representatives were responsible for the educational or pedagogical elements of their particular federation. Interviews were scheduled several days in advance to provide the representatives with ample time for consultation and coordination with other union members. However, inasmuch as conversations purposely remained at a general level and did not enter into concrete proposals, the reactions of the representatives do not necessarily reflect that which each union might take when confronted with a specific project.

Somewhat surprisingly, there was a strong coincidence in terms of areas of emphasis for possible future projects related to the training of teachers. On at least three major points the three union representatives interviewed seemed to be in complete agreement:

1. The need to decentralize pre- and in-service training into the regions, with the existing Normal Schools serving as hubs or centers of a wheel of actions radiating toward the *nucleos* and out into the more isolated rural areas. This would include the pre-service training, the professionalization courses and coordination with and/or support for the regular in-service training program now organized by the Sections responsible for each level.
2. The central focus in whatever type of training program should be upon the non-accredited teacher.
3. The need to refurbish the physical condition of the normal and the primary schools, the basic furniture and equipment as well as the didactic materials as a step toward improving the quality of primary school education.

All three of the union representatives expressed their support for projects which would include any or all of these three elements.

In addition there were other points of confluence:

- The need for in-service training for the teachers of the Normal Schools and of the "professionalization" courses in order to update them on recent educational advances and methodological changes.
- The need to find viable formulas which permit the poorest families to support the primary education of their children, especially in rural areas. The cost of purchasing primary school textbooks was cited by all three as a serious drawback for families in marginal urban and rural areas.
- The renovation of both the primary and the normal school curricula to include more active methodologies and global approaches in all types and levels of training programs.
- More research studies on the realities of the student, the teacher and the community in relation to the development of quality educational programs.

The lack of active participation of the teacher in the development of curriculum plans for the pre- or in-service training of teachers, even for the primary school, was also cited by the opposition teacher's union as a limitation of the new MED thrust. From that perspective, training plans showed little concern for the local problems of teachers, delineating rather a single, academically-oriented curriculum for all teachers in every part of the country.

On the other hand, the representatives of the other two teaching federations saw the need for strong central coordination of the educational process at this moment in order to combat the continued efforts of the opposition party to block advances. They

said that the FSLN blocked the textbook training programs through boycotts, that much of the material taught in professionalization courses is political in nature, that they plan to take out certain pages of the textbooks where there are disagreements and that they, in general terms, resisted change in the primary school.

The representatives also indicated remaining problems and offered some new proposals:

- Develop demonstration or application schools near each of the Normal Schools.
- Accreditation courses for teachers should be held in intensive periods during the months of July and December in order to cut down on costs.
- Develop a new primary school teacher profile.
- Revise school libraries in all parts of the country.
- Provide students with desks.
- Create real stimuli for teachers.
- Provide free textbooks.
- Evaluate the textbooks and their application in the schools.
- Organize school lunch programs for primary school children, with international support.
- Re-establish school health and dental programs.

One conclusion was apparent. As conversations advance for the possible development of a project it is extremely important that constant contact is maintained with these teacher's representatives not only to keep them informed but to solicit and incorporate their suggestions and support in any aspect relating to the development or welfare of the teacher.

G. Secondary School Teachers

Although this was not part of the original scope, the secondary school teachers also exhibited great needs for training. In fact, the Normal School teachers are really at secondary level. Thus, any in-country training action targeted for the Normal School teachers could, with very little additional cost, be expanded to include the secondary teachers. The necessities are certainly present.

There are 3,398 secondary school teachers in the country, including about 540 who attend to the regular and professionalization courses of the Normal Schools. Of the overall total, 2,515 are in the four main subject areas. There were no data on the number who are non-accredited but the Director of Secondary Education estimates 50-60% are in that category. With the financial restrictions placed upon the Ministry in terms of training, few in-service courses will be held this year with regular budget funds.

H. Conclusions

1. General

- a. The present teacher training system is inadequate to meet the needs of a growing student population which will require between 4500 and 6000 new teachers in the next decade. In addition, it would take between five and ten years for the in-service accreditation program to prepare existing teachers, assuming no teacher turnover.
- b. Pre- and in-service training of primary school teachers do not promote active methodologies and prepare the teacher as a community agent, but rather for a passive teaching role. This makes it difficult for the teacher to work with the community in the resolution of many existing problems, from the development of teaching materials to the rebuilding of the school.
- c. The overall training of primary school teachers is currently at the secondary level but it could be raised to that of higher educations. To do this will require extensive recruitment of secondary school graduates, the elimination of the non-accredited teacher and the restoration of the position of the teacher as an important community professional.
- d. Training of teachers will be more effective if decentralized to the regions and the municipalities.

2. On Pre-Service Training

- a. There is a desperate need to build a new profile of the Normal School graduate, set up the internal regulations which govern the schools and organize an evaluation system to match the profile and the regulations. None of these exist at present.
- b. If the Normal Schools step up their capacity and their recruitment programs in the next three years, they would be in a better position to ensure that the number of graduates meets the number of new teachers needed annually.
- c. Selection procedures are minimal and little recruitment is carried out at the Normal Schools. As a result, the quality of Normal School students is low.
- d. There is a slow but perceptible shift in the type of student entering the pre-service training program in Nicaragua. For diverse reasons, more and more secondary school graduates are choosing Normal Schools. This trend, if continued, could lead to an increase in the overall cultural and educational level of the primary school teacher within the next five years.

- e. The Normal School curriculum lacks active and integrated programming, flexibility in its programming, its course content and its materials which would allow adaptation to the specific needs of the students from differ areas.
- f. The Normal Schools cannot meet current demands for teachers. To supply the numbers of teachers needed building renovation, capacity to produce their own teaching materials, intensive in-service training and better libraries are required.
- g. Several of the existing Normal Schools are functioning only at a minimal level. It will be necessary to integrate the those which currently have only professionalization courses with the nearest Teacher Training Center, eventually leaving the country with 10 or 11 Normal Schools.
- h. The lack of follow-up studies on student graduates of the Normal Schools, on the effectiveness of these graduates as teachers, on current and future capacity, and on the training levels of Normal School teachers makes it almost impossible to project future development of the pre-service training program.
- i. Individual Normal Schools remain quite isolated from contact with similar centers in other parts of the country. There is, as a result, little exchange of ideas between the Normal Schools.

3. On In-Service Training

- a. The "professionalization" or accreditation program for the non-certified teacher has expanded greatly in its nine years of operation, peaking at about 8,400 enrolled in 1990. While it has the potential to confront the untrained teacher problem, it cannot do it unless the flow of new untrained teachers into the system is stopped and program quality is improved.
- b. Until this year, perhaps as many as 70-90%, of the non-accredited teachers were pursuing the Saturday-summer program to receive their professional certification. For many it was part of their contract agreement. Cutbacks of MED support for meals and transportation have however, cut preliminary enrollments by as much as 50% in some *nucleos*, thus placing the entire program in jeopardy.
- c. The regular in-service training program (*capacitación*) is practically non-existent. The infrastructure exists with over 600 technicians down to the municipal level, but no support is given to enable them to carry forth their responsibilities. This type of in-service training depends almost entirely upon outside funding.

- d. While there is articulation between the pre-service programs at the Normal Schools and the professionalization courses, little or no coordination exists with the other in-service workshops, inasmuch as they are controlled by different sections of the Ministry of Education.
- e. There is little quality control in the professionalization courses, especially in the *nucleos* taught by teachers who are not from the Normal Schools. What assessment exists is provided in occasional meetings of the directors of the *nucleos*, usually staff members of the Normal Schools. Common evaluation criteria for the individual classes are needed to assure uniform advancements.
- f. There is a lack of information on how many non-accredited teachers do not attend professionalization courses and why.
- g. Many of the non-credited teachers fall into distinctive categories; such as, those near retirement, the disabled, those who have suffered wartime stress, those in remote areas, and so on. There are no special assessments of their needs individual needs.
- h. The diversity of methodologies utilized in the various in-service training programs, the shortage of materials and the inadequacies of the teachers of these programs has made it almost impossible to set up a continuous in-service training program for all teachers.
- i. At present, there is no single record of in-service training of primary teachers in the country. Even though they have the same cliental, individual Sections of MED plan their own courses and workshops with little knowledge of course content or programming of other Sections. In addition, there is no inventory of teacher needs, either by subject area or by grade level and no control over who receives what training and when.

I. Recommendations for Sustainable USAID Investment in Teacher Training

1. Stimulate alternative strategies to confront the shortage of trained teachers and the lack of funds for in-service programs. Such strategies would include:
 - Setting up a process for evaluating teacher effectiveness and tying compensation to these measures.
 - A quick accreditation of experienced teachers without their certificates, depending upon the evaluation outcomes.
 - Active recruitment of secondary graduates for Normal Schools.

- Revitalize the curriculum in all training programs to insure wider interest and participation.
- Publication of guidelines and booklets for the organization of municipal level workshops by existing technicians.

2. Support the development of a network of innovative Teacher Training Centers responsible for coordinating a decentralized pre- and in-service training of primary school teachers, utilizing 10-12 of the existing Normal Schools as the hubs. This network would include the *nucleos* and would be under the direction of the Section for Pre- and In-Service Training of teachers at MED. These new centers would have responsibility for:

- An expanded program of pre-service training.
- Conducting and/or coordinating the in-service accreditation programs within their respective regions.
- Promoting in-service training for all teachers, including those with certification, and coordinating workshops and courses conducted by other sections of MED for the primary school teacher.

In order to accomplish the above there is a need to:

- Provide in-country and out of country training for personnel of the Central Ministry and the Teacher Training Centers so that they all become both certified and prepared for their new roles.
- Support the creation of an adequate infrastructure in each of the Teacher Training Centers to maintain this new thrust.
- Support the development of the physical and human resources necessary at the existing *nucleos* in order to establish a more adequate infrastructure and a more qualitative program for the accreditation courses for primary school teachers.
- Develop a distance training program, utilizing existing materials from the sub-region, for the teachers working in remote rural areas not reached by the Teacher Training Centers or the *nucleos*.
- Provide leadership in the coordination and utilization of the existing infrastructure at Regional and Municipal levels for in-service training activities.

Such a program would have as five-year goals:

- Lower the percentage of the non-accredited teacher in the primary schools

of Nicaragua to under 10%.

- Establish quality pre-service training programs for primary teachers while enabling the new Teacher Training Centers to meet the yearly needs of the educational system.
- Raise the standard of these Teacher Training Centers from their current secondary level to that of a non-university higher education program.
- Initiate a controlled system, utilizing both face-to-face and distance methodologies, for providing continuous in-service training to all primary school teachers from the moment they enter the profession.
- Provide advanced training courses and programs for the technicians assigned at the Regional and Municipal levels for the respective Sections of the Ministry of Education.
- Promote the renovation of the curriculum programs for pre- and in-service training to include more active methodologies and integrated approaches to subject areas.
- Promote the necessary legal, financial and technical changes to provide the teacher with a greater incentive, a better status and a better standard of living.

The project could be divided into phases:

Phase 0 - 1991 - Preparation of studies and key documents.

1. Projections of teacher supply and demand, 1991-1996.
2. Study of effectiveness of teaching at the classroom level.
3. Study on impediments to a smooth functioning, coordinated pre- and in-service training program.
4. Technical assistance for the development of:
 - The above studies
 - New curriculum plans for pre and in-service training.
5. Initiate in-country short-term training for 20 key central MED and Normal School specialists in specially organized courses at the local universities.

Phase 1 - 1992 - Preparation of human resources and development of infrastructure to sustain a quality pre and in-service teacher training program.

1. In-country training of 500 Normal School teachers in active teaching methodologies and integrated approaches to subject areas. In addition to the costs of the workshops themselves, this will involve contracting local technicians from the universities or bringing outside expertise. Some secondary school teachers could also be included in these workshops.
2. Providing 500-1000 updated books and other teaching materials for the documentation centers at the 10-12 Normal Schools.
3. Providing a package of 50-100 essential technical books for use in the *nucleos* in the professionalization programs.
4. Providing 22 transport vehicles for use at the central and regional levels, including the Normal Schools, and about 150-200 motorcycles or bicycles for the technicians at the municipal levels.
5. Provide the necessary equipment and materials for the modernization of 20-24 science laboratories at the Normal Schools.
6. Provision of equipment such as, mimeograph machines, photocopy machines and computers, for the reproduction of teaching materials at the 10-12 Normal Schools and in the Section of Pre- and In-Service Training at MED. This same equipment will also service the *nucleos* and provide a service to the municipalities where professionalization courses are being developed.
7. Assist in the renovation of intern facilities for approximately 1,500 students at ten different Normal Schools which service rural areas.
8. While it is not recommended that the project enter into the re-construction of the Normal Schools, it is suggested that basic facilities, such as bathrooms, central water facilities and roof be attended.
9. Provide a complete set of basic agricultural equipment, the kind available in rural Nicaragua, for the school gardens at the Normal Schools.

Phase 2 - 1992-94 - Full operation of the network of innovative Teacher Training Centers, with focus upon the eradication of the non-accredited teacher.

1. Costing of meals and transportation of an average of 6,000 teachers for the professionalization courses over a five-year period.

2. Costing of workshops over a five-year span of time for about 700 MED Regional and Municipal level technicians on active teaching methodologies and integrated approaches to subject matter organization.
3. Development of materials for workshops and accreditation courses.
4. Set up an evaluation system for the continuous assessment and improvement of pre and in-service training courses.
5. Implementation of new curriculum plans and programs in the Teacher Training Centers and application of programs for non-accredited teachers.
6. Adaptation and application of existing Central American distance training materials (to be published by Unesco in 1991) for the rural teacher in remote regions.

Phase 3 - 1993-96 - Continued operation of network of innovative Teacher Training Centers with stress upon upgrading pre-service training of teachers and the in-service training of technicians and teachers at the municipal level.

1. Continuation of activities 1-4, 6 from Phase 2.
2. Upgrading of pre-service training to higher education level.
3. Continuous evaluations of quality of teaching at all levels involved in the project.

NOTE: It will be important in the formulation stage of this project to coordinate specific activities closely with the Nicaragua/Holland/Unesco project, due to start at mid-year, 1991. That project has many activities related to the training of personnel at central, regional and normal school levels.

4. Extend the in-country training programs for Normal School teachers to include some secondary level specialists in the subject areas. A schedule by regions would need to be made. This would be a manner of fully utilizing any foreign specialists in the mathematics, science, social science or Spanish areas.

IX. PRIMARY ADULT EDUCATION

This chapter focuses on the national literacy program and non-formal basic education programs of the MED and the adult education programs of private organizations.

The low school completion rate makes focus on adult education imperative for the formation of literate populace, but during the past ten years, the supply of literacy and non-formal basic adult education has decreased dramatically. This drop in the percentage of the illiterate populations served is directly attributable to a decrease in the number of individuals willing to serve as voluntary teachers. The lack of teachers responsible for recruiting students has also resulted in lower enrollments. Teacher turnover rates are also higher than in the past, causing greater amounts of lost class time, lower completion student rates, and reduced educational efficiency.

In terms of institutional materials, the Bureau of Adult Education is considering options for adapting or developing a complete integrated series of texts for its formal program, *Educación Básica para Adultos* (EBA). Because of political content, the language and social science books in this series are considered unacceptable. The materials of another non-formal, literacy based program for rural adults, *Educación Popular Básico al Campo* (EPB), are inexpensive to produce, contain practical information for the rural adult, and are pedagogically superior to the literacy and EBA textbooks, but are considered a complementary series. Thus, new textbooks for the formal, post-literacy program need to be developed.

It is recommended that the MED should examine compensating non-formal adult education teachers as a way to increase teacher participation and retention. The Language and Social Science text books of the EBA program should be replaced. Donor efforts should be targeted at helping the Adult Education Bureau in its development of a series of new texts that reflect Nicaraguan reality. This would take advantage of the bureau's current experience in its pilot project to develop low cost, practical materials for rural post-literate adults in the EPB program. A short run strategy would be the adaptation of Mexican or other Central American post-literacy adult education series.

A. Introduction

A lasting creation of the Sandinista government is the existence of a non-formal basic education system for adults. After completion of the National Literacy Crusade in August 1980, the Sandinista government institutionalized the delivery to adults of literacy and numeracy training and a non-formal basic education program. While the motives for providing this education were partly political, to teach marginally educated adults the virtues of the "revolution", the results of the effort are generally viewed as positive (Miller, 1985). Existing data suggest that hundreds of thousands of adults became literate and numerate, and many of these went on to complete their primary education.

However, today, eleven years following the literacy campaign, much of the previous public and private support for the program has faded. The volunteer corps of non-formal adult education teachers has significantly fallen in number during the last ten years, as has enrollment. Teachers, who receive no form of compensation today, are poorly qualified, often themselves recent graduates of the literacy program. Many who became literate during the Crusade have since reverted to illiteracy for lack of available reading materials and continuing education opportunities. Official government statistics for 1985, the last year in which data on literacy were collected, reveal that the illiteracy rate had risen from 12.9 percent immediately following the Crusade to 24.9 percent at that time. Adult Education Specialists in the Ministry of Education estimate that the rate has risen to perhaps as high as 45 percent at the time of this assessment. This figure is only 5 percent less than the percentage of illiterates at the time the Sandinistas came to power.

Efforts to eradicate illiteracy, however continue. Currently, the Ministry of Education (MED) delivers educational services to illiterate and marginally educated adults through a national literacy program and two non-formal basic education programs. The MED also offers a formal primary accelerated program to youth and young adults. Finally, several private organizations offer literacy and basic education to adults.

B. Background

Prior to the Sandinista government, there were under 25,000 students enrolled in adult education programs in Nicaragua. These programs were the responsibility of the private sector and church groups. Thus, marginally educated adults had few options for upgrading their education. The barely literate could complete their primary education in an accelerated night program that began in 1960, but the program was restricted to the large urban centers in Nicaragua. Literacy teaching did exist, but not through the government. Church-sponsored groups organized community programs, but these reached a small percentage of Nicaragua's uneducated adults

It wasn't until the Sandinista government came to power in 1979, that the basic education needs of adults were addressed on a national scale. The elimination of illiteracy and the introduction of adult education were priority objectives of the revolutionary government.

One of the most celebrated social programs of the Sandinista government was their national literacy campaign which was announced by the new government within 15 days of their ascent to power. The campaign was called the *Cruzada Nacional de Alfabetización* (CNA) and was fully supported by Nicaraguans, and by the international community at large. The \$10 million cost of the campaign was funded principally by international donors, led by the United States, West Germany, Sweden, Switzerland, and the Netherlands. The GON supplemented donor contributions with its own funds raised through the sale of Patriotic Literacy Bonds. Public and private employees also contributed to the cost of the campaign by tithing monthly one day's salary (Miller, 1985).

Authors agree that from the very beginning of the CNA there was a clarity of purpose among educational planners. On a practical level, the overriding goal of the campaign was to eliminate illiteracy as a social phenomenon. Specifically, this task meant reducing the illiteracy rate to 10 to 15 percent, establishing a nationwide system of adult education and expanding primary school coverage throughout the country. In further support of development, the Crusade was to help people become more effective, productive, involved members of their nation--committed to social transformation and to participating as informed citizens in the political, economic, and cultural aspects of their society. The campaign also was intended to make the general public sensitive to the problems and rights of the poor, to promote empathy and social commitment, and to prepare citizens for their responsibilities in meeting the challenge of national development.

The first step in the campaign was a national literacy census taken in 1980 which revealed that more than 50 percent of the adult population (722,431) was illiterate, with more than three-quarters of the rural population unable to read or write.

In addressing this problem, more than 500,000 people (1/6 of population), students and teachers alike, participated directly in the campaign: 460,000 as students of literacy and 95,000 as teachers. Over the course of the campaign some 406,000 students demonstrated mastery of elementary reading and writing skills by passing a five-part final examination. The participation of women was high as over half the teachers and students were female.

The campaign was heralded a great success both within and outside of Nicaragua as the massive effort was able to reduce the illiteracy rate to 12.9%, based on the results of a post-campaign census. In 1980, the crusade was honored by UNESCO for its "distinguished and effective contribution on behalf of literacy" (Miller, 1985). But its achievements went beyond literacy. Among the outcomes of the campaign can be included the winning of youth, particularly those who worked as *Brigadistas*, to the cause of the revolution; integrating rural populations into national life; and helping to bridge the social and cultural gaps between the Atlantic and Pacific Coasts.

In 1981, the Sandinista government established a six-year primary education equivalency program for adults. The *Educación Popular Básico* (EPB) program was taught by volunteers, and was based mainly in rural areas. The program had a flexible schedule, and was similar in content to the formal primary education curriculum for children, except the textbooks contained more revolutionary political diatribe than the children's books. This form of popular education was used by the government to garner and maintain the political support of *campesinos* by promoting the virtues of the revolution. The target groups for the popular adult education programs were farmer cooperatives, women workers, agricultural and industrial workers and ethnic groups.

The political objectives of adult education continued throughout the Sandinista period. According to the 1987 MED Literacy Strategy, the principal objective of the program was to provide adults with political education about the Sandinista revolution. Adult education was considered part of the revolutionary process, and seen as a way to

consolidate rural political support.

Notwithstanding the politicization of adult education by the Sandinistas, that government did provide reading and writing skills to thousands of illiterate adults during the Literacy Crusade. The success of that massive literacy campaign is generally attributed to commitment of a people and a government born of a liberation struggle. Participation and volunteerism was high as a result of this widespread commitment. Reviving that kind of involvement in Nicaragua is the principal challenge faced by the current Bureau of Adult Education.

C. Target Population

The current literacy and non-formal basic education programs of the MED are targeted at illiterate and marginally educated adults between the ages of 10 and 50, according to the Director of these programs. In rural areas, they consist mainly of small farmers and landless wage laborers. In urban regions, the population is represented principally by self-employed small merchants and producers in the informal sector.

Under its programs during the next six years, the MED plans to target for special attention economically marginal women, ethnic groups, returning refugees, demobilized soldiers from the Contra and GON army, and youngsters between 10 and 14 years of age. This will be done by developing special materials consistent with the particular educational needs of each group.

The targeted population is the poorest sector of Nicaragua, according to the Director of the Bureau of Adult Education. Prospective students view literacy and non-formal adult education programs as an avenue to social and economic advancement in Nicaragua, either through finding higher paying employment or by using their new human resource skills to raise productivity on their farm or in their urban-based business. Most enrollees enter with the desire to complete their primary education, though in reality few adult education participants attain that objective.

Many marginally educated Nicaraguan adults today are the product of a very restrictive educational system which existed prior to 1979. In 1976, for example, of the approximately 70 percent of children who actually entered the primary grades, over half dropped out within a year. Although approximately 50 percent of the population lived in rural areas, two-thirds of the students enrolled were from urban centers. Official statistics indicated that during the 1970s, only five percent of the students entering primary school in the countryside completed their studies (Close, 1988)

1. Illiteracy in Nicaragua

In 1985, the last year for which Nicaraguan government data are available, the illiteracy rate was estimated at 24.6 percent, almost double the rate which existed in 1980, immediately following the Crusade. The 24.6 percent rate is currently quoted in MED

publications, although most adult education specialists in the Ministry admit the current figure is probably closer to 40 percent overall, and over 50 percent in rural areas. The combined adverse factors experienced during the 1980s of a declining number of literacy program enrollees, a growing number of children bypassing the primary education system altogether, estimated at 20,000 annually, and many new literates reverting to illiteracy, lend support to the higher illiteracy rates quoted of over 40 percent. To obtain a better sense of the true magnitude of the problem, the MED is seeking assistance from UNESCO to fund a national literacy census in 1991.

The following table provides population data on the level of illiteracy in Nicaragua between the period 1980-1990. The rate for 1990 is based on the estimates provided by knowledgeable Nicaraguan adult educators.

Table 33: Percentage of Nicaraguan Illiterates

	1979	1980	1985	1990
TOTAL POPULATION	1,768,435	1,821,387	2,133,585	2,591,927
LITERATES	884,218	1,586,428	1,608,724	1,555,156
ILLITERATES	884,218	234,959	524,861	1,036,771
ILLITERACY RATE	50.0%	12.9%	24.6%	40.0%

*Represents population above age 10.

D. Findings

1. Bureau of Adult Education

At the national level of the Ministry of Education, the Bureau of Adult Education is divided into two Sections: Literacy and Adult Education; and Communication.

Politically, the Director of the Bureau is an UNO supporter, appointed in October 1990, but the Deputy Director, and Chiefs of the Education and Communication Sections are holdovers from the previous administration, having been with Adult Education since the 1980 Crusade. Notwithstanding this political asymmetry, a series of meeting with these administrators suggested no tension between the Director and her subordinates.

According to the Director, her first priority is to replace the political aspects of the curriculum with teachings about democratic values, and Nicaraguan culture and traditions.

The Literacy and Adult Education Section sets policy, coordinates, and manages all MED non-formal basic adult education programs. This involves developing annual action plans, devising curriculum, and implementing programs through the Bureau's regional representatives. The Communication section is responsible for promoting the Bureau's programs throughout the country, and for using various media such as radio, television, posters, and billboard signs to recruit volunteer teachers as well as adult students.

From 1980-87, promotion activities were greatly assisted through a Bureau-sponsored radio program, *Puno en Alto*. The program was started with residual funds from the Crusade. It aired twice daily, Monday-Friday for thirty minutes. Broadcasts consisted of a mix of promotions for adult education, and practical information for listeners on such topics as family planning, nutrition, and hygiene. The radio program ended abruptly in 1988, a victim of budget cuts, even though it remained popular with listeners.

Promotion activities today are coordinated with the Public Relations Office of the MED. Radio and television promotions encourage individuals to volunteer as teachers, uneducated adults to participate as students, and local leaders and institutions to support the Bureau's programs in their respective communities. Posters echoing the same message are also distributed to communities throughout the country. This year, to finance its billboard campaign, the Bureau is proposing to seek assistance from commercial users of the signs.

Adult education is overseen in the regions by the Regional delegate. Day-to-day management of the programs is the responsibility of regionally- and municipally-based adult education specialists hired directly by the delegate who are tasked with recruiting, orientating, training and supervising volunteer teachers, coordinating adult education student groups, and collecting statistics on the number of enrolles and volunteer teachers. They also must submit bi-monthly progress reports to the Bureau regarding actual versus planned accomplishments. Due to government fiscal constraints, in practically all parts of the country at present, adult education specialists also are responsible for managing formal primary education programs in their region.

2. Program Profiles

a. Overview

The Bureau of Adult Education offers three education programs in: 1) literacy; 2) non-formal, but accredited basic education; and 3) non-formal, non-accredited basic education. The literacy and accredited basic education program, *Educación Básica de Adultos* (EBA) are offered throughout the country, though no instructional materials are available in any language but Spanish. The non-accredited basic education program, *Educación Popular al Campo* (EPB), is a new program, introduced in 1990 on a pilot basis in three regions. All three programs are extremely flexible and informal. Students are able to enroll in each of the programs throughout the school year, which for adult

education is from April-October. In addition, teachers of all three programs serve on a strictly voluntary basis. In 1990, these programs had an initial enrollment of approximately 36,000 students. The illiterate and marginally educated adults actually served over that year were estimated at 24,000. This is out of an illiterate adult population estimated at over 1,036,771. Estimates for the 1991 programs are 42,000 in the literacy program and 36,000 in the advanced program.

b. Literacy Program

The literacy program is characterized by Bureau Administrators as extremely informal and flexible. The class schedule is set at the collective convenience of students and the teacher. Classes are held wherever available space can be procured in the community. Common locations include schools, community centers, individual homes, and church buildings.

Classes generally run for one year, though according to Bureau administrators, an individual theoretically can complete the program in sixty two-hour sessions. Class size is from three to ten, and students range in age from 10-50. Rural illiterates comprise about 80 percent of the program's enrollees, according to MED enrollment data.

Entering literacy students are given a diagnostic exam by the teacher in an attempt to tailor the pace of the program to their individual needs. Students are asked to write their name, and engage in a few reading and writing exercises--single words first, then short sentences. Once in the program, students are evaluated by the teacher every three months on their ability to perform reading and writing exercises in the workbook. To be certified as literate, students must prove competent in reading, reading comprehension, and writing.

Graduates of the literacy program have a number of educational options: a MED accelerated formal primary education program; *Educación Básica de Adultos*, a non-formal primary education equivalent; and in a few rural areas, *Educación Popular Básico*, another non-formal basic education program which is not certified as a primary education equivalent. No data are available regarding graduates' educational selections, but most do not continue their education, according to the Director of the program. In the rural areas, about 30 percent enter the EBA program. An equal number of graduates of urban-based literacy programs enter the primary accelerated program which is offered exclusively in urban locations.

Under the Sandinista government, high school students were mandated to teach adult education as a form of social service. Non-student literacy teachers received some form of compensation for their efforts, though the amount declined steadily over their administration. Initially, the assistance was material, consisting of clothes, food and a lantern to conduct courses in non-electrified areas. Later the government provided teachers with a monthly stipend equal to roughly half the minimum wage. While the assistance in absolute terms was minimal, in the struggling Nicaraguan economy of the 1980s, it was often enough to motivate individuals to volunteer as teachers.

Participation and retention of teachers in the program has fallen in concert with the decline in teacher compensation. According to MED statistics, the number of literacy teachers is down to about 9,000 today from a high of 18,869. Bureau staff estimate that annual teacher turnover is about eighty percent.

Volunteer teachers are also expected to take a leadership role in recruiting students for the program. According to the Regional Adult Education Specialist, they are often assisted in this effort by local leaders from the government, church, private community associations, and agricultural cooperatives.

Paralleling the trend within the formal primary education system, the qualifications of volunteer teachers have fallen considerably during the last 10 years, according to the Director of the program. A majority of volunteers have a fourth grade education, and are between 25 and 30 years of age. A literacy volunteer today is just as likely to be a new literate as a primary education graduate. About 80 percent have not completed their primary education. About five percent of volunteers have had some formal teacher training or experience. The lack of compensation provided to volunteers is responsible for some of this trend. In general, urban-based teachers are considered better qualified than their rural counterparts.

The drop in teacher qualifications has made teacher training imperative. This year, due to budget constraints, few funds are available for this activity. Moreover, the current level of high teacher turnover, makes training a poor investment at this time. In the past, teachers were provided with in-service training every month by the municipal adult education specialists. Teachers were trained in literacy and basic education instruction methodology and in organizing education programs.

As illustrated in Table 33, while the number of illiterates in the country have grown in recent years, enrollment in the literacy program has dropped dramatically. At its post-crusade peak year of 1983, when 61,167 adults received literacy training. By 1990, however, enrollment had fallen to 15,706. Of these, about 37% achieve literacy based on the latest available MED data. The decline in enrollment is a direct consequence of the fall in teacher participation, since teachers are responsible for recruiting students. As drop in teacher participation has outpaced declining enrollments, the student-teacher ratio has fallen from 3.24 in 1983 to 1.92 at present. MED statistics also indicate that the program primarily benefits rural adults who represented about 75% of total enrollees between 1982 and 1986.

Table 34: Trends in Student-Teacher Participation

	1983	1986	1990
Teachers	18,869	13,060	8,158
Students	61,167	35,006	15,706
Student-Teacher Ratio	3.24	2.68	1.92
Literacy Achievers*	28,872	13,016	5,497
Percent of Students	47.2%	37.2%	35.0%

*The number of literacy achievers is a projection since actual figures were not available. The projection is based on an achievement rate of 37%, the average rate for the years 1983-87, the most recent MED data available.

According to Juan Arrien, the UNESCO representative to Nicaragua who has been working in education for over thirty years, the decline in teacher participation is not the sole cause of the drop in literacy enrollment. He attributes as equally important the displacement effects of the war, the economic pressures of the last five years which have not afforded the poor sufficient leisure time to learn, and reductions in the Ministry of Education's budget for program promotion.

c. Educación Básica de Adultos

The *Educación Básica de Adultos* (EBA) program began in March of 1981, as a non-formal primary education equivalency program for rural adults. The program under the former government was called the *Educación Popular de Adultos*. Until 1986, the program had a six-year term. It has subsequently been condensed to three years.

Like the literacy program, EBA is flexible and instruction informal. Classes are small, ranging from 5-15 students. Many participants are recent graduates of the literacy program. The program also suffers the same difficulties as the literacy program in recruiting and retaining a cadre of qualified volunteer teachers. Teachers for this program are required to have completed their primary education, at minimum, though it is reported that many have not. Between 1983 and 1990, teacher participation fell from 21,994 to about 2,000.

The program is based mainly in rural areas, as a similar but more formal primary education equivalent program for adults is offered in the urban areas of Nicaragua. Because the EBA is equivalent to a primary education, it attracts a significant number of rural youth over the age of 10, who are interested in progressing to secondary school. No statistics are available regarding the percentage of graduates that elect to continue

their education at either the general or technical secondary level. According to the Director of the program, most students terminate their education with completion of the EBA. Of the few who elect to enter secondary school, the vast majority become uneasy with the formal method of teaching and subsequently withdraw, usually before the start of the second year.

Students learn Spanish Language, Mathematics, Social Science, and Physical Science. During the first and second years, individuals are educated in language and math. In the final year, they receive instruction in the social and natural sciences as well.

Enrollment in the EBA program has also declined since 1983. By 1990, enrollment had fallen to 19,432 from a peak in 1983 of 105,041. The retention rate among students has averaged 40 percent since 1983.

d. *Educación Popular Básico al Campo*

The *Educación Popular Básico al Campo* program (EPB) was introduced in 1990 on a pilot basis in ten communities in Regions II, III and VI as a non-primary education equivalent program. Thus, the program is targeted at those rural adults not interested in entering a formal system of education upon graduation.

The curriculum is a three year program. However, instructional materials for the second and third years are still under development. The MED hopes to introduce year 2 in 1992, and year 3 in 1993. Eventually, the MED hopes to deliver the program nationally, in Spanish, Creole English, Miskito and Sumo.

Except for the different curriculum, this program operates in the same non-formal fashion as the EBA program. The age of the students is generally older, however, since the program is aimed at individuals not interested in obtaining a secondary education. In 1990, the program served about 1,000 rural adults, according to the Bureau's Deputy Director. No enrollment data are yet available on this program.

The EPB program was developed by the MED after observing that many rural adult graduates of the literacy program were choosing not to continue their education in the EBA program. Through the EPB, the MED hopes to deliver a more practical education to rural adults whose opportunities for continued post primary education are limited. There is some overlap between the EPB and EBA program in that both offer a flexible, mainly informal, basic education to the rural adult.

The program is divided into three one year cycles. Year 1 called Unidades Comunes consists of ten 20 page pamphlets on practical education topics for the rural adult such as family planning, women's rights, preventive health care, human sexuality, and cultivating crops. These pamphlets are filled with easy to understand graphics and narrative, and appear collectively to be more stimulating and practical instructional materials than those of the EBA and literacy program.

The second year of the program is called *Estudios Especificos*, and will be dedicated to providing adults with practical information pertaining to their specific region of residence. Curricula will differ by region, depending on the economic staple of the area. For example, in the cotton growing region of the country, adults will learn about improved methods of cotton cultivation, cotton processing, and marketing of the product. Different curricula will be developed for the other agricultural areas of the country. The third year of the program will be an optional block. Students will have a number of traditional subjects from which to choose. The MED is in the process of developing the textbooks for years 2 and 3, but lack funds for publication. Thus, it is not clear at this point when the program will be expanded to other parts of the country.

3. Administration of Literacy and Non-formal Adult Education

a. Program Financing

The approved 1991 budget for the Bureau of Adult Education totals \$584,310. Two hundred thousand dollars of this total represent funds recently added to the Bureau's budget by the Ministry of Finance. These funds were apparently reallocated to the MED from the Ministry of Defense. The Bureau plans to use this money to provide volunteers with materials that would assist them in carrying out their teaching. These materials include flashlights, shoes, clothes, and lanterns. With a corps of about 10,000 adult education teachers, the per capita expenditure for the year would be about \$20.

Since all teachers serve without pay, personnel costs represent only 12.5% of the total budget. Most of the budget is allocated to promotion (38%) of adult ed. programs, and publication and distribution of instructional materials (31%).

This year's budget is extremely austere, according to Bureau personnel. For the first time in recent history, no funds have been allocated for teacher training, even though the need for such training is great given the lack of teaching experience among today's volunteers. A small amount of \$49,375 has been budgeted for regional adult education specialists to visit school communities. With each of the 103 regional and municipal adult education specialists responsible for the oversight of about 100 adult education teachers, this travel budget will not permit them to visit the field frequently enough to properly conduct their oversight work.

The Bureau has relied on outside assistance during the past several years for a variety of development activities. Since 1986, the Finnish Government, through their development agency Finnida, has funded a five-year \$700,000 UNESCO directed project. The project, Strategic Support for Popular Adult Education, is scheduled to end in June 1991. The project has funded teacher training workshops, publication and distribution of instructional materials, and purchase of air conditioners, typewriters and other office equipment. An Italian agency, *Movimiento Laico Para America Latina*, provided \$25,000 since 1987 for the development and printing of the new series of EPB books. This year, UNICEF is providing \$2,000 to underwrite the 1991 national training workshop for regional adult education specialists.

Included in the Bureau's 1991 annual plan is a proposal to secure from the United States funding for the procurement of new Language and Social Science textbooks for the EBA program, as well as new literacy and numeracy books.

b. Service Delivery

The Bureau of Adult Education is led by a Director, Deputy Director, Chief of Communication and Promotion, and Chief of Literacy and Non-Formal Basic Education Programs. These individuals are supported at the National office by a technical and support staff of 43.

The national office is responsible for setting policy, developing the annual budget and activities plan, developing curriculum, promoting the programs, and overseeing operations at the regional level.

All policy level staff at the Bureau are former teachers. Most came to the Bureau of Adult Education during the National Literacy Crusade. The staff lacks research materials, as well as technical expertise in the areas of education administration, research and evaluation.

There are 43 adult education specialists based in the nine regions and another 60 located throughout the 51 municipalities. All the adult education specialists are integrated, in that they oversee other education systems of the MED at the local level, either pre-escolar, primary, or secondary. The 103 total education specialists are spread thinly throughout Nicaragua, especially when considering they are responsible for supervising and providing technical support to over 10,000 volunteer teachers. In theory, they are supposed to consult with these teachers monthly. In actuality they rarely are able to because of their heavy portfolios, and small travel budgets. In the past, the compensation paid to volunteer teachers insured that teachers would be seen by MED staff at least once a month. This opportunity to consult with the volunteer on a regular basis is no longer available now that teachers serve without pay. The job of the adult education specialist is further complicated today by the frequent turnover of volunteer teachers.

Communication between the national and field offices does not flow in any systematic, or logical fashion. The development of annual plans, budgets, and curriculums is carried out by the national office without any formal input from the regions. The Bureau's long-term strategy goals, for instance, for the period 1991-96 were set without consulting beforehand with the regional offices to check if the goals were realistic. Curriculum development could also benefit from systematic input from the field, especially from the volunteer teachers who are best positioned to comment on the educational needs and preferences of adult students.

The transmission of data from the field to the national office is another problem. Monthly data are collected by municipalities on number of initial and actual matriculations, and teachers. The information is aggregated at the regional level and

sent bi-monthly to the national statistics office (until 1984, the Bureau had its own statistical department). The data usually arrive late, reducing its value as a planning and evaluation tool. In one case, data on initial enrollments for 1989 was not received by the Bureau of Adult Education until December 1990. The data that are collected are of limited use. Information on retention rates in open entry education programs like those of the Bureau is essentially meaningless. Data on literacy achievement and completion rates among initial enrollees of the EBA and EPB programs would be far more useful.

The Bureau does not have a research capability or the funds to finance research. Detailed information on teacher qualifications, pedagogical methods, pedagogical successes, and profile of students was not available. This type of information would be very useful for developing an effective curriculum.

4. Instructional Quality

a. Teaching

The absence of any payment to teachers has made it extremely difficult for the Bureau to attract and retain volunteers. The trend since the Crusade of declining teacher participation is consistent with the steady reduction of compensation paid to volunteers. Fewer teachers has meant fewer enrollees since teachers are the principal recruiters of students. Recruitment and retention of qualified teachers were cited as the most pressing needs by everyone in the Bureau of Adult Education. Compensating teachers in some fashion is seen by the Bureau as the only viable way of attracting qualified volunteers.

The inability to retain volunteers is manifested in a turnover rate of approximately 80 percent annually, according to the Director of the programs. Commonly, classes experience several teachers each year. The quality of instruction suffers considerably from the constant disruptions in learning which take place between the arrival of replacement teachers.

Teacher qualifications have also declined since the Crusade. According to Bureau staff less than ten percent are trained teachers, and most have not completed primary school. It is not uncommon for a teacher to have been a student in one of the adult education programs the previous year. While these volunteers are well motivated, their ability to engage the students in stimulating learning is hampered by their lack of teacher training and experience. Consequently, it is felt that most volunteers teach very mechanically, rarely deviating from the instruction manual.

Teacher training plays a critical role since most volunteers are inexperienced. Since 1987, the Bureau has been able to utilize donor funds to finance the training of teachers. Training takes place at the national level once a year. The training is conducted under a pyramid system, beginning with a four- or five-day workshop, held in March in Managua. Regional adult education specialists are provided training by Bureau staff in Literacy and EBA education methodology, the organization of Literacy and EBA programs, and collection and processing of statistical information. Similar subsequent

workshops are repeated at the Regional level with Municipal adult education specialists participating. The pyramid concludes at the Municipal level where volunteer teachers are taught directly by municipal adult education specialists. Theoretically, the education specialists are to continue providing technical assistance to volunteer teachers every two weeks throughout the school year. Funding shortages have not enabled them to meet that frequently during the past few years.

Supervision of teachers by regional education specialists has become less rigorous in recent years because of reductions in staff and travel funds. The number of Municipal adult education specialists was cut by fifty percent between 1990 and 1991. Travel funds will permit each regional and adult education specialist to travel to the field once weekly. This will not be sufficient to enable the 103 adult education specialists to promote the adult education in communities, recruit new teachers, and consult monthly with the more than 10,000 existing teachers. As a result, the levels of participation in the program are likely to drop further this year, continuing a trend which began in 1984.

b. Instructional Materials

Instructional materials for all three programs are only available in Spanish. Thus, the approximately 100,000 non-Spanish speakers of Nicaragua are unable to participate in the program. According to Bureau personnel, all instructional materials are in the process of being translated into English, Miskito, and Sumo. They hope to complete this work by next year.

The literacy program is taught with one combination text-workbook. Because of acute shortages of books, students are required in many regions to return the books when leaving the program. The current book was introduced in 1987, and is void of any political propaganda. The companion teachers manual has been withdrawn from circulation by the current government, however, because of several references to "imperialist aggression", and the "revolutionary process". The Bureau is developing a new manual for this school year. The current text-workbook is not considered sufficiently stimulating, according to the Bureau's Director. Accordingly, the Bureau is hoping to secure donor assistance for the purchase of new literacy materials next year.

Instructional materials for the EBA program consist of a set of Language and Mathematics textbooks for first through third grades, and a Social Science and Natural Science Text for third grade. These were introduced in 1988. All Language texts, and the Social Science text have been withdrawn from the curriculum because of their political content. The Bureau is seeking assistance from USAID/Nicaragua to replace these books.

During the course of the assessment, the RTAC program offered to supply the Bureau with adult education books from Mexico. These books would be an entire series for the three post-literacy levels of the program. The books would be purchased through funds remaining in the RTAC contractor's contract to provide primary and secondary

texts. The assessment team had the opportunity to examine the books and determined that major revisions will be needed to adapt Mexican cultural content and language to Nicaragua. Both team members and RTAC personnel estimate that about a third of each book in the series must be adapted. This will require the formation of a team of Nicaraguan adult education specialists to review the books and make changes, as was done with the primary and secondary texts.

Two additional options are being contemplated. First, the Bureau director would like to review other Central American adult education material to determine if fewer adaptations would be needed. Second, there is a general feeling in the Bureau that if texts could be developed by the group in the same time frame and with comparable financial assistance, that would be needed to adapt the texts, this would be a preferable course of action.

The materials for the EBA program are less formal than those used by children in the primary education system. The Natural Science text, for example, offers practical information to the rural adult on preventive health care, crop cultivation, and nutrition. The Mathematics text is also written for the benefit of the rural adult as exercises emphasize the finances of the farm business.

The recently developed first-year instructional materials of the EPB program are considered more practical and stimulating than those used by the EBA or literacy program. The materials, consisting of ten soft cover books, are inexpensive to produce, and contain stimulating drawings which serve to illustrate as well as break the monotony of reading continuous text. Of practical benefit, each book is dedicated to a different topic aimed at improving the standard of living of the rural adult. Students are taught, for instance, the basics of family planning, personal hygiene, irrigation, and preventive health care.

While the curriculum has not been fully developed for the EPB program, at this stage, it appears to be of greater immediate benefit to the rural adult than the EBA curriculum.

5. Continuing Education

One of the many challenges facing the Bureau is the need to offer more educational opportunities to the literacy and non-formal education graduate. A lack of options for new literates to continue their education at times causes them to lapse into illiteracy. The absence of continuing education opportunities does more than cause the literate brain to atrophy. Adults are often less motivated to enter and complete a basic education program unless they see it as a stepping stone to further education.

Personnel from the Bureau all agreed formal linkages must be established between the non-formal basic education programs and the agricultural and industrial technical schools in the community. The concept, as related by the Bureau, is to have

these schools also offer periodic workshops to rural adults unable to attend classes full time. Classes would also be offered at night to accommodate adult work schedules.

E. Future Plans of the Bureau

Aware of the challenges ahead, the Bureau has a full agenda for the future, despite lacking funds to successfully implement it. The future activities of the Bureau are focused on realizing improvements in teacher recruitment and retention, student enrollment, and continuing education. In this sense, the Bureau appears to have a good understanding of its most critical program needs.

1. Teacher Recruitment and Retention

The Bureau recognizes that teachers will not be motivated to volunteer without the prospect of receiving some form of compensation, especially during this period of economic hardship. To attract and retain qualified teachers, the Director of the Bureau is proposing that primary education teachers be offered by the Ministry a 25 percent salary increase to teach one literacy or non-formal basic education class. This salary increase is in proportion to the 25 percent additional time the individual would spend teaching adults, approximately eight hours per week. This would not only motivate individuals to teach adult education, but in some cases raise the experience level of teachers. This proposal is probably not feasible, however, given the austere fiscal state of the government.

2. Student Enrollment

The Bureau recently developed a six-year plan for its literacy program through 1996. The goal of the Bureau is to provide literacy training to 360,000 individuals during that period, though based on historical experience, only about 133,200 will achieve literacy. While the goal is noble, it will not be met unless additional resources are devoted to recruiting students. The plan offers no strategy to achieve the goal. Within this plan, the Bureau also hopes to train 12,000 teachers, and 660 adult education specialists. These goals also appear unrealistic considering no MED money is available in 1991 for training.

As shown in Table 35, by 1996 the population age 10 and above is expected to increase by 509,720 to 3.1 million. Even if the enrollment goal of the six year plan is fully met, the level of illiteracy in Nicaragua will fall only marginally because of the large number of existing illiterates. Although 360,000 would be trained under the plan, only 133,200 would achieve literacy based on historical data. At the same time, the base of illiterates would expand by 100,000 from the estimated 20,000 children each year who reach the age of 10 illiterate, having bypassed the primary education system completely. The net gain of the Bureau's six-year effort would be a reduction of just 33,200 illiterates. Thus, a large scale effort to provide literacy to the current illiterate population of over

600,000 appears to be the only way to reduce illiteracy significantly in a short period of time.

Table 35: Projected Change in Illiteracy Rate Following Full Achievement of MED Literacy Training Goals

	1991	BY 1996
Total Population Over 10	2,686,662	3,208,641
Planned MED Trained Literates	60,000	360,000
Literacy Achievers (37%)	22,000	133,200
New Illiterates	20,000	100,000
Net Change in # of Illiterates	-----	-33,200
Total Illiterates over Age 10	660,919	627,719
Literacy Rate	24.6%	19.5%

Just to prevent the illiterate population from expanding, at least 20,000 illiterate adults annually will have to be taught to read and write. In 1990, the MED succeeded in giving only 5,497 adults these basic skills. Thus, the numbers of illiterates reached through the MED's literacy program will have to expand dramatically in the coming years if the Government of Nicaragua is not to fall further behind in its efforts to reduce illiteracy.

3. Continuing Education

To expand educational opportunities for program graduates, the Bureau is in the process of developing a proposal to coordinate its programs with non-formal educational opportunities offered by other Ministries, principally Health and Agriculture, which offer health promotion and agricultural extension services to rural populations. The Bureau also plans to coordinate its activities with the NGO community of non-formal educators, SINACAP, the national vocational and technical training system, and secondary level agricultural and technical schools. These linkages would serve to supplement the Bureau's education with more technical training in areas related to the individual's vocational area. They would also serve to attract more students to the Bureau's programs at little additional cost to the government.

F. Formal General Adult Education Programs of the MED

The MED also offers a formal primary and secondary education program for adults. Because the curriculum of these programs is more formal, and closely resembles

the traditional curriculum for children, they are administered under the Bureau of General Education. The primary education program is referred to as *Primaria Accelerada*, an accelerated three-year program. There are two secondary education programs: a traditional night school program for workers, referred to as *Media General Para Trabajadores*, and *Educacion a Distancia*, a correspondence program.

1. Accelerated Primary Education

In 1990, the accelerated primary education program was transferred back to the Bureau of General Education from the Bureau of Adult Education, which had been administering the program since 1986. This seems to have been a sound decision by the MED since the curriculum of the program and age of the student body parallel more closely the traditional primary education program than they do the non-formal EBA program.

The program, previously known as the *Centro de Educación de Adultos (CEDA)*, was initiated in 1960, as a formal, fully accredited primary education program. The program has always been concentrated in the urban areas of Nicaragua. Instruction is at night to accommodate working adults. Classes are held for three hours daily, Monday - Friday. Teachers are paid by the MED, and some teach during the day as well. The level of qualifications and degree of teacher stability are considered by the Bureau of Adult Education to be better than among non-formal adult education teachers, but worse than among the regular primary education teacher corps.

The primary accelerated program for adults in 1990 enrolled a total of 14,418 students, a decrease of 7,232 students or 33% since 1983. Women students represented 47 percent of the total. Most students are between the ages of 15-20. The program predominates in the urban areas as only 6 percent of students are from rural Nicaragua. Most classes are held in primary schools. The percentage of first year enrollees to reach the III Cycle or fifth grade is about 53%. Student-teacher ratios averaged nationally 32 to 1. No statistics are available regarding the degree to which graduates of the program continue their education at the secondary level.

According to the Director of the Accelerated Primary Education, the program suffers from some of the same problems as non-formal adult education programs. Teachers are said to be poorly qualified, teacher turnover is high, and the curriculum needs to be made more stimulating and relevant to the needs of the adult student.

2. General Secondary Education

Distance and night education are both five-year programs, offered mainly in urban areas. The two programs have a total enrollment of about 120,000, but all but 2,000 of these are enrolled in the night school. Both are accredited secondary education programs, thereby qualifying graduates for university entrance. Most students are between the ages of 25-40.

The night program holds classes for three hours each night, five days/week. The curriculum is exactly the same as the day program.

Distance education classes meet formally with the teacher on Saturday for the full day, from 8 am to 6 pm. The teacher is also available to meet with students requiring assistance on Wednesday nights. The method of instruction for distance education emphasizes independent learning, but substantively the material does not differ from the day program. Each teacher in distance education has between 15 and 20 students. Students are evaluated periodically through exams. Teachers and materials for both programs are completely financed by MED. Most teachers have other teaching jobs with the MED during the day. Teachers under these two secondary programs are paid less than day teachers because they work fewer hours.

G. Private Literacy and Non-Formal Basic Adult Education Programs

There are two private organizations offering literacy and non-formal basic education, in addition to the MED. *Alfabetización y Literatura* (ALFALIT) and the *Consejo de Iglesias Evangélico Pro-Alianza Denominacional* (CEPAD) are Christian based organizations. Both CEPAD and ALFALIT receive considerable funding from various Christian organizations in Europe, the U.S., and Canada.

ALFALIT, was founded in 1961 in Costa Rica. The fundamental mission of the organization is to provide literacy training to rural adults. Since its founding, ALFALIT has established operations in thirteen Latin American countries. ALFALIT/Nicaragua began providing literacy training in 1961. Since, the Literacy Crusade of 1980, ALFALIT has served as more an agent for the literacy programs of MED, then as an independent provider of literacy training.

ALFALIT serves 80 rural communities in Nicaragua, including the North Atlantic Coast where literacy training is provided in the Miskito and Sumo languages. ALFALIT employs an education specialist in each region who is responsible for promoting the program and recruiting teachers. In 1990, 500 ALFALIT-recruited teachers provided literacy education to over 1,500 rural adults (these ALFALIT teachers and students are included as part of the aggregated statistics of the MED). ALFALIT compensates its teachers each month with a small stipend. Teacher qualifications are similar to those recruited by the MED, according to the Director of ALFALIT. However, teacher turnover is much less, due, in part, to the added extrinsic incentive. Teachers receive training and are evaluated twice monthly by the regional education specialist.

CEPAD was founded in 1973 to provide disaster relief to victims of the 1972 earthquake. In addition to delivering literacy and primary education to adults, CEPAD offers technical services to rural adults in the areas of agriculture, health, and fisheries.

In literacy education, CEPAD collaborates closely with ALFALIT. CEPAD operates throughout rural Nicaragua. In 1990, the organization provided literacy training to 500 adults in 120 rural communities (these figures are also reflected in the aggregated

MED data). Like ALFALIT, CEPAD also compensates its teachers with a small monthly stipend.

CEPAD also provides primary education to pastors and leaders of local evangelical churches through an accelerated correspondence program. The curriculum consists of modules, similar to MED's secondary distance education program. Teachers are hired and paid entirely by CEPAD. The program is accredited by MED, but receives no financial subsidy from the Ministry. Students are taught the formal primary education curriculum of Language, Mathematics, Social Science, and Natural Science. In 1990, the program had an enrollment of 330 students.

H. Conclusions and Recommendations

1. Conclusions

- a. The Bureau of Adult Education is finding it extremely difficult to recruit and retain qualified teachers for the literacy and non-formal basic education programs. Unless teachers of these programs are rewarded financially for their efforts, the programs will continue to face difficulties recruiting and retaining teachers. Further, a large portion of the annual MED investment in teacher training will continue to be wasted as long as teacher turnover remains high.
- b. The decline in teacher participation since 1983 has had a direct impact on student enrollment which has experienced a similar decline. Once the programs are able to recruit teachers, increases in student enrollment should follow.
- c. In addition to the MED, two private organizations provide literacy training. Teachers of these organizations are paid a small monthly stipend to encourage them to stay. The monthly stipends paid to teachers by the two private organizations providing literacy training have had a salutary effect on teacher turnover within those programs.
- d. There is disagreement on the true extent of illiteracy in Nicaragua. Estimates range from the MED official rate of 24.6% to as high as 45%. The illiteracy rate today is probably above 24.6% since that figure is from 1985. Since then, it is likely that the drop in literacy enrollment, and increase in number of illiterate children reaching adulthood have combined to raise the level of illiteracy.
- e. The FBA and EPB programs are more similar than different as both are non-formal basic education programs targeted at the rural adult. There is, therefore, duplication of effort in regard to the development of instructional materials.

- f. All instructional materials were found to be adequate except for the politicized Language and Social Science text books of the *Educación Básico de Adultos* (EBA) program. However, the Bureau is considering options for adapting or developing a complete integrated series of texts for this program. The literacy materials are pedagogically sound and can be used in the future. The *Educación Popular Básico al Campo* (EPB) books are inexpensive to produce, contain practical information for the rural adult, and are considered pedagogically superior to the literacy and EBA textbooks.
- g. No non-formal adult education programs of the MED are reaching the non-Spanish speaking population of Nicaragua. Thus, the MED is failing to address the literacy and basic educational needs of several thousands of Nicaraguan citizens in the Atlantic coast region.
- h. Each Regional adult education specialist is responsible for supervising, training, and recruiting an average of 100 volunteer teachers. The heavy portfolios of regional adult education specialists and lack of travel funds do not permit them to adequately supervise, train and consult with the volunteer teachers on a regular basis, as required. This has also contributed to the decline in teaching quality, and increase in teacher turnover.
- i. Reading material and continuing education opportunities are scarce in rural areas. Many new literates lapse into illiteracy because of a lack of available post-literacy reading material or educational opportunities in rural areas.
- j. Opportunities are limited for basic education graduates to benefit from programs offered by other education institutions.
- k. Data on literacy achievement rates, EBA program completion rates, and number of volunteer teachers for each program do not appear to be collected by MED. Systematic collection of these data would greatly enhance program evaluation and planning.
- l. The Bureau of Adult Education develops curricula, budgets, annual plans and sets policy without soliciting input from the field. The highly centralized decision-making process leads to the development of a Bureau policy which is out of touch with the reality in the regions.
- m. The Bureau of Adult Education has been dependent on donor assistance for the past three years to finance teacher training, procurement of office equipment, maintenance of equipment, and printing of instructional materials. The MED is unable to sustain adult education at current levels of activity without donor support.

2. Recommendations

- a. The MED should consider instituting the following measures to recruit and retain additional literacy and non-formal basic education teachers, as well as adult students:
 - Require students of teacher preparation schools to teach adult education in their local communities for one year as part of their studies;
 - Establish an incentive system of prize awards to literacy teachers who train the most illiterates in their respective region. Prizes would be sufficiently large to motivate individuals to volunteer as teachers and reach large numbers of illiterate adults;
 - Offer university scholarships to secondary students who successfully educate a pre-determined number of adults in the non-formal basic education program.
 - Conduct a national social marketing campaign, aimed at promoting the value of being literate and of volunteerism for teaching adult education.
- b. An illiteracy census or representative illiteracy survey should be conducted in order to attain a better understanding of the reality of the problem. This information would enable the MED to better focus its scarce resources on particular regions and population cohorts.
- c. The *Educación Básico de Adultos* (EBA) and *Educación Popular Básico* programs should be consolidated to eliminate duplication. The new curriculum should be non-formal and teach practical information from which the rural adult can immediately benefit. An optional, more formal learning module should be integrated into the curriculum to accommodate those students interested in obtaining primary school certification and pursuing a secondary education.
- d. The controversial Language and Social Science text books of the EBA program should be replaced. Ideally, this should be accomplished through the development of a series of new texts that reflect Nicaraguan reality and take advantage of the practical materials now being developed. Time and cost factors must, however, be weighed by the Bureau, AID, and the textbook procurement contractor to determine if a more cost-effective strategy would be the adaptation of Mexican or other Central American post-literacy adult education series.

- e. The MED should translate all literacy and adult education materials into the non-Spanish speaking languages of Nicaragua in order to offer education on an equitable basis to all populations of the country.
- f. Directors of primary schools should be appointed by the MED as consultants/supervisors to the voluntary literacy and adult education teachers in communities where coverage of adult education programs by regional and technical adult education specialists is inadequate. Directors would provide critically needed support to volunteer teachers. Primary education specialists would receive status reports on adult education during their regularly scheduled visits to primary schools.
- g. The MED should be encouraged to coordinate its literacy and basic education programs for adults with education programs offered by agricultural and technical schools, government ministries, SINACAP, PVOs, and NGOs in an effort to expand continuing educational opportunities for rural adults. At the same time, entertaining reading material for new literates, such as a literacy program newspaper or even comic books, should be made more accessible to rural adults.
- h. The MED should begin collecting data systematically on literacy achievement rates, basic education program completion rates, and number of teachers in each program. The Directors of primary schools could collect this data from volunteer teachers and transmit it to municipal and regional education specialists during their required field visits to primary schools.
- i. The MED needs to establish a more participatory system of operation which receives systematic input from the regional and municipal adult education specialists, as well as the volunteer teachers on matters relating to program plans, curriculum development, budget formulation, teaching methodology, program promotion, and volunteer recruitment.

X. SCHOOL COMMUNITY RELATIONSHIPS

This chapter presents the information that was collected on community structure, economic conditions, political organization, parental relationships with teachers and schools, teachers' conception of the community, and the nature of parental participation in the educational process.

Poverty in Nicaragua is widespread and increasing at an unknown rate, resulting in high levels of malnutrition in the form of stunting; at least 30-35% of school-age children are affected, and an equal number are at risk. The educational and health consequences of stunting are poor cognitive abilities, decreased aerobic activities, reduced alertness, increased mortality and morbidity rates. All have bearings on learning ability, school achievement, grade repetition, and desertion rates.

Another consequence of poverty and economic instability has been an increase in the number of matrifocal families, putting increased pressure on children to join the work force and spend time taking care of younger siblings with a negative effect on school attendance and achievement.

Community organizations are relatively free of political influence and factionalism. There is a good organizational structure available for school parent interaction.

Both parents and teachers recognize the need to improve school buildings and classroom facilities, and the physical deterioration in many schools makes effective teaching and learning virtually impossible, but improvement to the infrastructure must be accompanied by adequate security to prevent theft.

In the current economic environment, the majority of families will find it difficult to pay for new instructional materials.

It is recommended that in order to reverse the nutritional decline, school feeding programs should be instituted, with the cooperation of other donor agencies, to provide an adequate quantity of animal protein to counter the negative effects of stunting.

School renovation and construction should be targeted to areas of greatest need, to include parts of Nicaragua with high concentrations of demilitarized populations.

A systematic study of the opportunity costs of primary schooling should be undertaken in conjunction with an evaluation of the economic sacrifice associated with the purchase of books, school supplies and other educational expenses.

In order to assure representative coverage and to detect possible geographical and sociocultural variation in organizational structure, attitudes and behaviors, all six of the major administrative regions of Nicaragua were visited. Time limitations and work stoppages of national airlines did not permit visits to the two Autonomous Regions (RAAN and RAAS) and the Special Zone (ZE-3) along the southern border with Costa Rica, but enough information was available from the Programa Bilingue Intercultural at the MED in Managua to give an overview of the programs and major problems.

A. Economic Conditions

In order to examine the role of community residents and their organizational structure in relation to primary education, the economic status of both rural and urban areas must be evaluated. The main focus is on whether or not families with children can satisfy minimal needs in terms of housing, sanitary facilities, health, and nutrition. The assumption is that families who are unable to adequately house and feed themselves have limited abilities for diverting scarce financial resources to purchase books and other school supplies, pay school enrollment fees, share in school maintenance and repair costs, and contribute to parental organizations. The data presented in this section are from government publications and field visits by members of the assessment team.

1. Extent of Poverty in Nicaragua: Summary Data

Because of the wild fluctuation in the value of the Nicaraguan currency, multiple sources of family income, networks of family cooperation, production for home consumption, and payment in-kind, it is virtually impossible to determine the nature and extent of poverty using monetary income as a measure. An alternative method is to examine a family's ability to satisfy certain necessities in terms of a basic food basket and the maintenance of adequate nutrition.

The criteria used to classify families either as those who can meet basic needs versus those who to varying degrees cannot is based on a composite indicator, combining the following measures:

- **Inadequate Quality of Housing** is determined by the presence of dirt floors and/or walls and ceilings of tin or waste materials such as paper carton or pieces of wood.
- **Crowding** is based on whether or not four or more people sleep in the same room.
- **Insufficient Services** consists of the lack of potable water and/or a latrine within the confines of the household or surrounding compound.
- **Low Educational Levels** is measured in terms of a household having at least one school-age child who is not attending any kind of school.
- **High Economic Dependence** is defined as households with at least two individuals economically dependent on a head of household who has not completed primary school.

If one or more of these measures apply to a household, it is classified as poor (*pobres*). These families are further divided into the extremely poor (*en extrema pobreza*) if two of the measures apply and in misery (*en miseria*) if three or more of the measures apply. Furthermore, families who do not qualify for any of these measures are considered able to satisfy basic needs (*necesidades básicas satisfechas—NBS*) versus those who cannot based on one or more of the measures (*Necesidades básicas insatisfechas—NBI*).¹

The 1985 sociodemographic survey showed that 43% of the households in Managua should be classified as poor, and by the end of 1989 the rate had increased to 45.7%. The table below shows the total distribution of those who can satisfy basic needs in relation to those who cannot, and a breakdown by female versus male heads of household. It should be noted that the percentage of poor households is significantly higher for those headed by females.

Table 36: Poverty Levels in Managua from 1985 to 1989
(percent of families)

Poverty Indicators	1985			1989					
	Total	Male	Female	March			December		
				Total	Male	Female	Total	Male	Female
Can Satis. Needs	57.0	58.7	53.1	54.3	56.0	50.0	54.5	59.4	45.1
Cannot Satis. Needs	43.0	41.3	46.9	45.7	44.0	50.0	45.5	40.6	54.9

Source: SPP 1990

Of the families in poverty in 1985, 12.7% were classified as extreme and 3.6% in misery. In 1989, the level of extreme poverty had not changed significantly, but the level of misery had nearly doubled to 6.6%. In terms of the specific indicators making up the composite NBI index, the number of families with inadequate living quarters and insufficient services increased, while the degree of crowding decreased, educational levels improved slightly, and the degree of economic dependence remained constant.

Over fourteen months have passed since the surveys discussed above were carried out, and in the meantime, the economy has continued to decline. There is no way of knowing how much poverty levels have increased, but the qualitative case studies presented at the end of this section provide a broad indication of the problems many families have meeting the basic needs. Before moving to the case studies, an examination of available nutritional data is in order.

2. Extent of Malnutrition in Nicaragua

In general terms, the caloric and protein intake of the Nicaraguan population has declined substantially since 1986, the last year when the average consumption met minimal standards. The table below shows the decline from 1986 to 1989.

Table 37: Calorie and Protein Consumption from 1986 to 1989

Nutrients	1986	1987	1988	1989
Calories (kcal.)	2,160	1,932	1,610	1,591
% of Daily Requirements	116.7	104.4	87.0	86.0
Protein (grams)	49.8	44.7	38.9	37.5
% of Daily Requirements	99.0	89.2	77.6	74.9

Source: SPP 1990

The implication of the increasing protein-calorie deficiency in the general population is that a significant portion is suffering from some degree of malnutrition or is at risk of becoming malnourished. The groups most likely to suffer more severe effects are children and pregnant or lactating women who have higher nutritional requirements. When higher nutritional needs are considered in conjunction with the current levels of poverty, the size of the protein-calorie deficits are, in fact, much higher for a large proportion of the Nicaraguan population. Furthermore, some regions of the country are more affected than others. The following table shows the relative distribution of malnutrition as measured using height for age in children aged 6-9 in 1986:

**Table 38: Malnutrition by Region in Children Age 6-9
1986**

Region	Malnutrition		
	Total	Moderate	Severe
I. Estelí	22.6	17.2	5.4
II. León	20.9	16.6	4.3
III. Managua	15.3	13.0	2.3
IV. Granada	27.4	20.4	7.0
V. Juigalpa	24.8	18.4	6.4
VI. Matagalpa	29.5	21.2	8.3
ZE-3 San Carlos	16.0	12.2	3.8
National Average	22.0	17.0	5.0

Source: Primer Censo Nacional de Talla in SPP 1990

The table above shows malnutrition in the 6-9 year cohort to be the highest in Matagalpa, followed by Granada and Juigalpa, and these three regions are 7.5, 5.5, and 2.8 percentage points above the national average of 22%. The ethnographic data presented later in this section also point to higher levels of poverty and malnutrition in these same regions. It is important to note that these are summary figures cutting across all income levels and social classes. Again, keeping in mind the levels of poverty and the deteriorating economic situation, the current levels of malnutrition must be much higher, especially in the lower classes.

More recent nutritional data available to the team was collected in 1989 from case studies in four regions, not including Managua. The data consisted of height for age disaggregated into children under one and children aged 1 through 5 and is presented in the table below. Since different age cohorts and measurements were used, the data from 1986 and 1989 are not comparable, but, at the very least, give a rough estimate of the magnitude of the nutritional deficits.

Table 39: Percent Malnutrition in Children Under 6 in Regions I, II, IV, and VI—1989

Regions	Sample Size	Overweight	Normal	At Risk	Malnourished	Risk + Mal.
I. Estelí	36,385	3.0	47.5	28.7	20.8	49.5
<1 year	15,244	4.9	63.0	19.9	12.2	32.1
1-5 years	21,141	1.7	36.3	35.0	26.9	61.9
II. León	35,849	2.7	55.4	26.4	15.5	41.9
<1 year	16,362	4.2	69.0	16.2	10.6	26.8
1-5 years	19,487	1.5	43.9	34.9	19.7	54.6
IV. Granada	10,647	9.3	47.2	20.2	23.3	43.5
<1 year	5,952	10.5	50.5	18.6	20.4	39.0
1-5 years	4,695	7.7	43.0	22.3	27.0	49.3
VI. Matagalpa	30,856	5.1	52.2	25.6	17.2	42.8
<1 year	16,273	7.8	60.0	19.8	12.4	32.2
1-5 years	14,583	2.1	43.0	32.2	22.7	54.9

Source: Programa de Control del Crecimiento in SPP 1990

As can be seen, the overall levels of malnutrition in the four regions in children under 6 ranges from a high of 23.3% in Granada to a low of 15.5% in León. An examination of the differences between under 1 and 1-5 years of age shows a considerable increase in the older age group; Estelí and Granada are almost six percentage points higher. In other words, about one quarter of the children who will be

entering first grade in these four regions suffer from some degree of malnutrition. If one combines the percent of children at risk of becoming malnourished with those who already are, the percentages become alarmingly high. In Estelí, 61.9% of the 1-5 year olds are at risk or malnourished, in León and Matagalpa there the percentage stands at almost 55, and in Granada, nearly half the children entering school in 1989 were either malnourished or at risk of becoming so. In view of the deteriorating purchasing power experienced by Nicaraguan families over the past 14 months, many of those who were at risk in 1989 will have crossed the line and are suffering from some degree of malnutrition while in the first year of school.

In 1989, the Ministry of Health undertook a nation-wide study of 7,905 randomly selected school children aged 6-14, using the standard anthropometric measures of height for age, weight for age, and the ratio of weight by height, as shown in Table 35.

Table 40: Malnutrition in Nicaraguan School-Children Age 6-14

Nutritional Classification	Age Groups					
	6-9		10-12		13-14	
	Male s	Female s	Male s	Female es	Male s	Female s
Height for Age (percent)						
Normal	45.5	47.9	33.6	35.8	23.7	26.3
At Risk	32.7	36.1	37.6	33.5	32.8	38.9
Malnourished	21.8	16.0	28.8	30.7	43.4	34.7
Risk + Malnour.	54.5	52.1	66.4	64.2	76.2	73.6
Weight for Age (percent)						
Normal	46.7	46.2	33.9	37.3	26.3	46.3
At Risk	37.9	42.9	48.6	45.5	42.0	38.7
Malnourished	15.4	10.9	17.5	17.2	31.7	15.0
Risk + Malnour.	53.3	53.8	66.1	62.7	73.7	53.7
Weight/Height (percent)						
Normal	73.8	76.3	86.2	100	99.1	100
At Risk	22.5	19.5	12.1	0	0.9	0
Malnourished	3.7	4.2	1.7	0	0	0
Risk + Malnour.	26.2	23.7	13.8	0	0.9	0

Source: SVEN October-November 1990

As shown by the ratio of weight/height, severe malnutrition or wasting is not a major problem in the school-age population, although almost one-quarter of the of the 6-9 year olds are at risk. The rate of low weight for age is under 20% for all three age groups, except 13-14 year old males where it reaches almost one-third of the sample. By far the most severe nutritional problem among Nicaraguan school-children is stunting as indicated by the large percentage of children who are short for their age, indicating deficient skeletal development. The rates of stunting are highest for 13 -14 year old males at 43.4% of the sample and almost 10% lower for females. When those at risk of becoming stunted are added to the percent of stunted children, the percentages are alarmingly high, all are 50% with some at or very close to three-quarters of the oldest age cohort.

3. Qualitative Case Studies

The information on social and economic conditions was obtained through meetings with groups of parents in urban Juigalpa, rural communities in León and Granada, and urban/rural home visits in Managua, Juigalpa, Estelí, and Matagalpa. In the group meetings the parents were told the purpose of the visit and the importance gaining a first-hand understanding of the economic situation in which Nicaraguan families live, especially as it applies to the ability to send children to school and to purchase school supplies. Parents interviewed in three large group-meetings were not hesitant to give their opinions and, at times, became quite emotional while discussing their problems and living conditions. The home visits lasted about 30 minutes to an hour, and the parent(s) were encouraged to give as many details as possible about how they earn a living, what they eat, their feelings about the utility of education, the local school, and the socio-economic conditions in their community.

The case studies presented below are neither special nor unusual, but reflect conditions encountered in over three-quarters of all the homes and schools visited. The homes were selected at random with no particular conditions regarding physical appearance or the number of residents. The only criterion applied was that the family had at least one child of primary school age, regardless of whether or not he/she was, in fact, going to school. The schools were selected from a list provided by Regional MED office, usually the Delegado Regional, and within the limits of available time and distance, the rural and urban schools were randomly selected.

Escuela Rosa Lanzas, Juigalpa:

The school is located on the outskirts of Juigalpa at the end of nearly impassable dirt road. Twenty-one teachers hold morning and afternoon sessions for some 668 students in a run-down building without a functioning electric system. About 120 children have no desks and sit in the floor. The afternoon third grade class is taught in the school courtyard using a cement wall as blackboard. When word reached the school in the early afternoon that visitors would arrive at four to talk to both teachers and parents, about 75 parents, all mothers except for four fathers, began assembling at 3 and

patiently waited until a little after 5 PM.

The first point made at the meeting was that every single family represented was not able to pay for the new textbooks, to buy pencils and notebooks, or to contribute money to help the school. About half the mothers said they had no husbands and were not able to adequately feed their children, so how could they be expected to pay for books. Money for school would have to come out of money needed to buy corn and beans. In past years there was a program which gave glasses of milk to the students, and if this could be started again, their children would be able to benefit from something they don't get at home. The parents complained about the high cost of notebooks, ranging from 20 to 50 Córdoba Oro.

A number of mothers made the point that conditions had never been worse than they are now. They recognize the importance for their children to go to school, but at the same time many, especially boys, can help their families by working; our first need is food! Toward the end of the meeting, the mothers were becoming increasingly emotional by constantly repeating and reiterating the desperation of their situation in the hope that help would come.

Escuela Napoleon Castillo, Las Mercedes, León:

On the day of the visit, a group of 18 parents, about an equal number of men and women, had come to the school to purchase books. The group was assembled in an empty classroom. Many stated that the books were difficult for them to pay for. They were concerned that if they could not pay, their children would not get any books.

The problem was that many men were out of work because of the poor cotton harvest in the region and the lack of any other kinds of jobs. Everyone agreed that the high prices for food was their major concern. Many, however, had hopes that the situation would improve in May, the beginning of the planting season. Here, as in Juigalpa, parents expressed concern over being able to adequately feed their children and would like the program which gave out glasses of milk reinstated, especially for children in pre-school through second grade.

Escuela Pastor Serrato, Río Grande, Rivas:

This rural community consists of 80 families who send 210 children to the two-room school. A building housing two classrooms had recently collapsed and some grades were forced to meet in private homes and the local church. A meeting was held with 27 parents, among them only two men, in one of the classrooms. Once more, the most pressing concern was the economic situation and that incomes in Río Grande were not sufficient to meet basic needs. Many families were illegally entering Costa Rica in search of employment and recent crop yields have been very poor. The result has been a diet limited almost exclusively to rice and beans (gallo pinto), and one resident said, "*aquí casi no conocen la carne* (meat is almost

unknown here)."

The next concern was that so few families were able to buy books or school supplies, and a number of mothers said they would have to take their children out of school. The Delegada Municipal from Rivas said that those who have more than 2-3 children in school would get free books and that no one should have to take their children out of school for lack of books. A desperate mother responded immediately by saying that she was going to take her children out because she could not afford to buy notebooks and pencils. Another mother said that her daughter wants to go to school and that education is valuable and necessary when children get older, but right now, there simply is no money for anything; what little money there is must be spent on food! The Delegada Municipal countered by saying that parents would be able to make a deposit of whatever they could afford and then pay the rest over time. After the meeting, parents were observed making small payments and walk out past the collapsed school building with a complete set of shiny new books.

Household interviews with individual families were consistent with the results of the group meetings. Out of a total of 18 homes visited, only two seemed to have the resources to ensure good nutrition. A general observation is that extreme economic hardship is the norm in the regions and communities visited and that family financial support to schooling is difficult. (Summaries of the family interviews are found in Appendix X-1.)

B. Political Organization

Virtually all communities visited were characterized by some degree of political division, ranging from rather mild factionalism to extreme polarization. The degree of division was generally a function of what party had won the municipal elections and the degree of cooperation that could be negotiated with the other party. For example, the city of Estelí can be characterized as the most polarized community encountered in all six regions.

In Estelí the municipal offices are held by the FSLN and as a result the FSLN supported teachers' union, *Asociación Nacional de Educadores Nicaraguenses — ANDEN*, is a dominant force in municipal as well as regional politics and education. The appointed *delegado* and *sub-delegado* who administer the regional office of the MED, are UNO supporters who wanted to replace a number of school directors under their administrative control. The decision was supported by law, stating that all school directors are *empleados de confianza* who can be replaced by the regional director of the MED. When attempts were made to replace the directors, ANDEN in conjunction with regional MED employees supportive of the FSLN occupied the MED building in Estelí for three days in the beginning of March, 1991. This resulted in a stand-off and was only resolved by a concession to keep the incumbent school directors, and a direct

consequence was that school opening in this region was delayed for one full week.

The political conditions in Estelí are most certainly not representative of the rest of the country, but they do point to instability and volatility. In smaller communities a remarkable degree of co-existence was found between the opposing political camps. For example, San Pedro is a small rural community about 10 kilometers north of Estelí where both FSLN and UNO members have organized and carried out community and school projects, working successfully as one unified group.

It was not unusual to hear a member of UNO criticize the FSLN and vice versa, but at the same time, it became apparent that most people, regardless of political affiliation, want to get on with their lives and try to improve the living condition in their communities. This includes improving the quality of the educational environment where their children attend school. According to information provided by both parents and teachers, the levels of political animosity have peaked, and conditions have begun to stabilize. Most people are more concerned with making a living and having enough to eat rather than spending time fighting political battles.

C. Community Organization

All Nicaraguan communities, both urban and rural, are administratively part of a *municipio* (municipality), the lowest level of political organization; a *municipio* can correspond to a single community or small city or include a central town with a varying number of subsidiary communities. Structurally, the *municipio* is led by an elected *alcalde* (mayor) who coordinates tax collection, administrative activities, and local development projects. The *Delegación Municipal del MED (DM)*, the lowest level of the educational bureaucracy, operates as a separate organizational structure from the municipal government. The DM interacts directly with the schools in the *municipio*, and each school, in turn, has organizational links with parents through community and neighborhood organizations.

During the ten years of FSLN administration, *municipios* and local communities (*comarcas*) were organized into *Comités de Defensa Sandinista (CDS)*, reaching to the lowest local levels of urban neighborhoods and small rural towns. Essentially, the local CDS organizations formed part of hierarchy tied to the party in power, but with a large degree of local autonomy, especially on the *municipio* level. One of the main functions of the CDS was to identify and carry out development projects with varying degrees of outside assistance, and many of the projects were to improve school infrastructure, provide nutritional supplements, and increase school attendance.

The change in government from the FSLN to UNO has resulted in a number alterations on the community level. These changes vary by *municipio* and individual communities within *municipios* and is very much related to what party holds the mayor's office. One trend that was observed virtually everywhere visited was that the *Comité de Defensa Sandinista* had been transformed to an arm of the local office of the FSLN and a

new organization, the *Comité Comarcal*, has taken its place. In terms of the community and the local school, the *Comité Comarcal* appears to have taken over the design and implementation of school projects

Very much like the CDS, the role of the *Comité Comarcal* is to identify community needs and to propose local development projects, and on several occasions it was found that municipios would negotiate directly with donors to obtain financial aid for their projects, and the work was accomplished using local volunteer labor. The nature of municipio—school projects can best be illustrated by examples from an urban community visited on the outskirts of Managua.

Mateares is a *municipio* of about 20,000 located on the western shore of Lake Managua and is divided into four barrios, each with an organized group of residents willing to contribute time and labor to projects administered by the *Comité Comarcal*. In May of 1990, the municipio's Director de Proyectos negotiated an agreement with a Canadian organization to finance 85% of the cost to install lighting in the Escuela Pancasán, the municipio would pay the rest, and the residents of the Barrio Brasil would provide the labor. Included in the labor force were tradesmen with the skills to install wiring and metal grids to prevent theft of neon fixtures, fuse boxes, and the electric meter; the total cost of the project was \$15,000. The lighting was needed to facilitate late afternoon and evening classes for both adult education and accelerated primary school for adults.

During the summer of 1990, another project was completed in Mateares, and it consisted of the construction of two classrooms and an office as an addition to the existing school to be used for a pre-school in the Barrio Alfonso González. The total cost of \$7,000 was met in-part by the French, the rest was raised by the municipio from local tax revenues, and the requisite skills and labor were provided by neighborhood residents.

Community participation was high for both projects. The Director the Proyectos estimated that about 80% of the neighborhood residents had participated to some degree, but added that Mateares residents were more motivated and willing to work than those living elsewhere. He felt that as long a financing could be found for materials, the community is organized to contribute skilled as well as manual labor.

In sharp contrast to Mateares was the situation encountered in Río Grande, a rural community about 15 kilometers southwest of Rivas near the border with Costa Rica. Originally, the school consisted of two wooden buildings with cement floors and sheet metal roofs, housing four classrooms. The staff is made up of five teachers and one director, offering pre-school through grade six to a total of 204 students in a community of about 80 families. About a week before the beginning of the school year, one of the buildings had collapsed, reducing the number of usable classrooms to two. As a result, the upper grades are being taught in a private home and in the church until the collapsed building can be reconstructed.

The school director, who is a member of the community, has been able to obtain 4,000 bricks and 40 sacks of cement to rebuild the school, and the community is donating the necessary wood. However, the price of the carpenters and bricklayers, even when these individuals have agreed to donate a day's work each week, is prohibitive. There is also the necessity of paying for a building license in a community whose economic situation was characterized by one resident as "Aqui no hay ni para morder."

Essentially, Río Grande does not have the economic resources nor the organization to seek funding outside of the community. The Delegación Municipal of the MED in Rivas has written to the Minister of Education explaining the desperate plight of this community, but has received no response, not even an acknowledgement of receipt of the letter.

At all the schools visited, parents and school directors said that the teachers organize a *Consejo Consultivo de Padres de Familia (CCPF)*, serving as a conduit between the local school and parents with the following functions: assure school attendance, resolve behavioral problems, discuss learning problems, involve parents in school projects, and encourage parents to make monetary contributions for school maintenance. A new CCPF is formed at the beginning of every academic year, and since school opened the week prior the team visits, no activities had gotten underway, except for initial organizational meetings; some teachers had yet to meet with parents for the first time.

Community participation in the CCPF is generally high at the beginning of the school year but then falls off rapidly as the academic year progresses. In some communities visited, participation was reported to be down to about 10% of the parents by the end of the year, and many never bother to attend graduation. Decreased participation appears to be more of an urban than a rural problem, but it is very difficult to identify any general trends or to make any distinctions by region or area of the country.

The outcome of the last elections resulted in a UNO victory for the presidency leading to the replacement of key personnel in the MED. Overall, the central Ministry in Managua was most affected while the Regional and Municipio levels were affected to varying degrees. The net result has been that the MED is administered by UNO but with a majority of the personnel from the previous administration. Furthermore, Nicaraguan *municipios* are divided to greater or lesser extent between the FSLN and UNO, having in some cases led to complete polarization and lack of any kind of cooperation. This kind of impasse extends to relations between parents and teachers. A common scenario consists of teachers who are strong supporters of the FSLN trying to organize a politically heterogeneous group of parents where a significant number refuse to participate or do so reluctantly.

For example, in the city of Estelí some 300 parents decided to found a new parental organization as a response to what they felt was overt political content in their children's education. Although this only represents one case, it may shed some light on the structural prerequisites for the formation of new groups, and a detailed account is in order.

The *Asociación de Padres de Familia Independientes de Estelí* was organized on April 4, 1990 with the express purpose of calling for new curricular content and pedagogic style devoid of political content. Current membership is composed of 300 heads of households, coming primarily from the working class. The *Asociación* has severe financial problems because the members cannot contribute very much, but at present the director is undertaking the requisite steps to establish the *persona jurídica* (legal identity) of the new organization.

Other objectives of the *Asociación* include getting scholarships for needy students, and to date four individuals have received financial benefits from MED; one person is studying forestry at the Technical University. Another objective is to improve school infrastructure by financing repairs, obtaining labor at a reasonable cost, and purchasing much needed supplies. The most serious limitation is a lack of funds because of the current economic condition and low income levels of the members.

The president of the *Asociación*, an Estelí lawyer, felt that the teachers in Región I could be classified as 30% independent and supportive of the new parents' organization, about 40% were undecided and could go either way depending on the prevailing political and economic currents, and 30% were firmly committed to the goals of the FSLN and the ANDEN union objectives.

In summary, the organizational structure in many communities, both urban and rural is highly varied and undergoing a period of change and subsequent restructuring. The most basic organizational features consist of a community development organization as part of the mayor's office and a parents' organization associated with each school which is re-established at the beginning of every school-year. The degree of cooperation between the school, parents and the *municipio* is highly variable and must be examined on a *municipio* by *municipio* basis. On one occasion, parents have formed their own organization independent of the teachers and have establish goals of their own.

D. Family Structure

No reliable information on the nation-wide distribution of family size and composition was found for this assessment, and because of the reincorporation of the contras combined with a general demobilization of the army, data from the early and middle 1980s are of limited utility. The overall concern for this section is to make a broad estimate of the relative proportion of families with both parents co-resident versus only the mother and her children, and to relate the variation in family structure to school enrollment and drop-out rates. The only available data based on a large-scale survey are from a study⁴ of the population of metropolitan Managua, and when combined with

⁴ "Características de los Jefes de Hogares y La Pobreza en la Ciudad de Managua," Dirección General Nivel de Vida, Secretaría de Planificación y Presupuesto, Ministerio de la Presidencia y el Fondo de las Naciones Unidas para Actividades de Población (FNUAP), Managua, Agosto 1990.

observations from field visits to urban and rural communities all six regions, a fairly comprehensive picture does emerge.

Based on data from the study cited above, there is a striking difference between the structure of families able to meet their basic necessities versus those that cannot. The number of female headed households is significantly higher for the poor and that number has increased significantly between 1985 and March of 1989, and even more during the eight month period between March and December of 1989 as shown in the following table:

Table 41: Percent Female Heads of Households — 1985-1989

Sex	1985			1989					
	Total	Satis.	Poor	March			December		
				Total	Satis	Poor	Total	Satis.	Poor
Men	69.2	71.3	66.4	71.1	73.4	68.4	65.8	71.7	58.8
Women	30.8	28.7	33.6	28.9	26.6	31.6	34.2	28.3	41.2

Source: SPP 1990

In 1985, the proportion of male in relation female headed households was approximately two-thirds versus one third, respectively, and the number of female headed households was only slightly higher among those classified as poor. By March of 1989, the number of female headed households in the general population had decreased to 28.9% and for the poor it had decreased to 31.6%. However, a startling increase in female headed households took place between March and December of 1989 when the percentage rose to 34.2 for the total and a high of 41.2 for those classified as poor. There is no way of knowing if this trend has continued at the same rate, decreased or increased during the past fourteen months, but if the deteriorating economic situation can be considered as a factor leading to greater family instability, then the current percentage is most certainly higher.

The data discussed above are just from Managua where about one-third of the Nicaraguan population lives. But visits to both urban and rural communities in other parts of the country supports the hypothesis that the number of female heads of households is quite widespread and, in all probability, is increasing in most regions.

For example, in the city of Juigalpa in a meeting with 75 mothers described above, about one-half indicated that they were single mothers struggling to work and maintain their households. A number of mothers said that the fathers of their children were forced to leave in the search of jobs but had promised to return. Few, however, expressed much confidence that they would come back any time in the near future.

Another case in point comes from a visit to a rural community named Las Mercedes, located about half-way between León and Chinandega where a meeting with 18 mothers was held. These mothers also indicated that at least one-third of the households in their community were headed by single females (madres-padres), and the president of the local *Consejo Consultiva de Padres de Familia* thought the number was even higher. At a rural school in Río Grande, near Rivas, 5 of the mothers present said they were madres-padres, but a teacher at the school indicated that the number was in reality much higher. Many of the single mothers were probably very reluctant to identify themselves to outsiders.

Clearly, both the 1989 survey of Managua households and the ethnographic data collected for this assessment indicate that the number of matrifocal families in Nicaragua comprise a large portion of the total number of households, and that this percentage is increasing. Only a new nation-wide socio-demographic survey or a full-scale national census would be able to show the distribution of matrifocal households with any degree of statistical validity.

E. Teachers, Schools, and Parents

This section presents data on how teachers feel about the schools and communities in which they work, and how parents conceive the role of the school and their own participation in school related activities. The data come exclusively from individual and group meetings with teachers, school directors, municipio delegates, técnicos educativos, and parents.

1. School Infrastructure

By far the most common theme in discussions about school infrastructure with teachers and parents was the inadequate number of classrooms, the poor and often dangerous conditions of existing classrooms, the need to repair existing electrical systems or to install new ones, the need for school furniture of all kinds—especially desks, the lack of educational supplies—including chalk, posters, charts, crayons, paper, etc., and the urgent need to provide security to prevent theft of the meager facilities and supplies.

Many of the schools visited were experiencing an unprecedented increase in the number of parents wanting to register their children for the current academic year. The most drastic example of this was in Juigalpa where demand was up about 50% on the average across all grades and program, and over 100% for first grade and pre-school in schools where large populations have recently settled. Juigalpa's staff and physical infrastructure was simply not prepared for this kind of an increase, and the region could only accommodate a 5% rise in enrollments. Thus many families were told that their children could not attend school.

Rural communities and recently established urban neighborhoods are pressuring local authorities for more new schools, more space in existing schools, and additional teachers to meet the increased demand. Some community leaders in Juigalpa are doing

their own census, and then bringing the results to the attention of municipio and school authorities to bolster their demands for more educational facilities and staff. Some schools have admitted more students by holding classes in private homes, in school patios, in churches, or as observed in one community—under a large shade tree.

2. Scheduling

Primary school scheduling was examined in terms the appropriateness of the annual school calendar and the daily schedule of classes. Questions were asked about the agricultural cycle and migratory labor practices in the rural areas visited, and about the general economic role of children in urban households.

In rural areas of León and Estelí, parents said that the opening of school and the first 6-8 weeks of classes interfere with agricultural activities. In both these regions, a large number of families provide labor for cotton in the western part of the country and tobacco in the north, and many opt to keep their children out of school when there is work and all who are physically able take part.

An example of how scheduling conflicts were resolved comes from the *Escuela Miguel Lareynaga*, an urban school in the city of Matagalpa. The *Consejo Consultivo de Padres de Familia* told the teachers and the school administrator that their children had to work in order to help their families survive; some had to work in the morning and others in the afternoon, making it impossible for many children to attend grades 1-3 given in the morning and grades 4-6 in the afternoon. The parents asked if it was possible to have all six grades given both morning and afternoon, and then each family would be able to send their children to the session best suited to the work schedules. The school agreed to make the changes, especially since it did not mean having to employ more teachers or longer working hours. It was simply a rearranging of the schedule to accommodate the difficulties most everyone was experiencing.

There is no way of knowing how wide-spread this kind of innovative scheduling is, nor do we know if other solutions to these kinds of problems have been tried. Furthermore, no schools were encountered where attempts have been made to change the actual academic calendar.

F. Community Participation in Adult Education

Parents expressed interest in adult education, but many had a number of reservations. The most frequently mentioned was that working all day combined with family responsibilities in the evening did not leave much time for school. Whenever asked, parents readily acknowledged the value of education, especially literacy. Some, however, questioned the utility of learning a skill or a trade when there are no jobs available and no real prospects for any in the future.

One serious obstacle to adult evening classes is the general disrepair of so many of the schools visited, especially the lack of a functioning electrical system. When questioned about this, many said they would like to have a chance to attend evening classes, but unless the school is up-graded and guarded to prevent thieves from stealing the light fixtures, the likelihood of having classes is next to impossible.

G. Participation of Girls/Women in Primary Education

Enrollment ratios and health statistics cited above show female enrollment to be higher than male, and that female nutritional status is also somewhat better. No studies were found to account for these differences nor any information beyond the more obvious economic explanations. None of the informants interviewed gave any indication of preferential treatment of boys versus girls in terms of which sex would benefit the most from getting a primary school education.

Both parents and teachers said that boys were more likely to be taken out of school when there were employment opportunities. This was equally the case in both urban and rural areas visited. Some parents in rural areas said that a boy should be out in the fields with his father in order to learn about the land and how to grow crops. Parents also related that girls play an important role in the care of younger siblings and in helping their mothers with household activities. Again, it should be emphasized that no data were encountered beyond the anecdotal accounts given by parents and teachers.

H. Primary Education and Special Populations

Special populations consists of two major groups. The first are the indigenous peoples and minority ethnic groups who live in the eastern part of Nicaragua and along the Atlantic Coast, and the second includes the large numbers of demobilized contra and Sandinista soldiers and their families and an unknown number of refugees who are returning to their homes. Most of the second group have settled in the northeast areas of the country around Matagalpa and a little farther south in Juigalpa, and the two groups have different problems and educational demands.

1. Eastern Nicaragua and the Atlantic Coast

Nicaragua's indigenous and minority populations live mainly in the eastern two-thirds of the country, especially along the Atlantic coast and in the Río San Juan and Río Coco regions. The exact number of each of the ethnically and linguistically distinct populations is unknown, but experts who are familiar with the region make the following estimate:

Table 42: Indigenous and Minority Populations

Linguistic Group	Estimated Population Size
Miskito	75,000
Creole	6-9,000
Sumo	27,000
Rama	5-800
Garífona	under 500

Source: Programa Educativo Bilingue Intercultural (PEBI)

These figures should only be seen as a very broad and speculative estimate. This region, more than any other in Nicaragua, has undergone extensive displacement of large populations as a result of the war and unknown rates of migration for both economic and other reasons. Many refugees have returned, but no accurate count exists of how many, and attempts to estimate the size of the current population is further compounded by high birth rates. Moreover, a total population estimate of about 125,000 would represent approximately 3% of Nicaragua's population, but it would not be unreasonable to conclude that these figures are low.

The political history of the Atlantic coast has been one of turbulence and alienation from the rest of Nicaragua, and movements for both limited and complete autonomy go back to the end of the 19th century. Events over the past decade have reinforced the separatist organizations, and the region continues to make demands that would lead to even greater autonomy; education has been no exception.

In 1980, a legal statute was enacted to guarantee the indigenous and minority populations access to primary education in their own languages. The first bicultural/bilingual experiment began in 1984 with 215 pre-school and first grade students receiving Miskito language instruction. Over the past 7 years, the original Miskito program has been expanded to include instruction in Sumo and Creole, serving 7,369 Miskito, 3,577 creoles, and 311 Sumo children through grades 4, 6, and 2, respectively. The total number of students taught in their native language was 11,227 in 1990, or about 30% of the primary school age group.

The entire *Programa Educativo Bilingue Intercultural* — PEBI has been considered experimental since its inception in 1984, and a variety of texts and teaching methods have been used by teachers with no special training in bilingual education. The textual materials for each linguistic group were adapted by native speaking educational technicians and reproduced locally, tested in the classroom, and changes made on an ad hoc basis. Another part of the program consists of the gradual introduction of Spanish language instruction by teachers who, in many cases, have a very poor command of the language.

Spanish language teaching uses the standard texts from the rest of the country, and they are not very suitable for teaching Spanish-as-a-second-language. Furthermore, *Azul y Blanco* has been translated literally into Miskito, creating additional problems because Miskito syntax and semantics are very different from Spanish. The creole students are taught using standard North American textbooks with an English quite different in terms of vocabulary and syntax from what is spoken on the Atlantic coast of Nicaragua.

Three distinct Miskito dialects and a number of lesser local variants further complicate the linguistic picture, making the use of standard texts and writing systems quite complicated. Teaching materials adapted to one dialect are quite often not accepted by speakers of another. In addition, Creole students and teachers have been highly critical of the use of American English and have for a long time been calling for their own didactic materials. Because of the relatively small number of speakers, the Sumo have been less vocal about having their own specially adapted materials, but they have also complained about the literal translations and the inappropriate use of Spanish language texts.

Another problem is the dearth of useful linguistic analysis on dialectal differences in Miskito and the lack of standardized writing systems for any of the languages in the region. A number of linguistic investigations are currently being done, but the PEBI staff at the MED in Managua were not aware of any results that could be used in curriculum design and native language textbook production.

- During 1990, the PEBI staff completed an *Investigación Evaluativa* (Investigative Evaluation) of their six years of bilingual/bicultural education with an emphasis on the following:
- coverage, promotion, and retention rates,
- the statistical information system,
- parental attitudes and expectations concerning bilingual/intercultural education,
- components of the program that needs to be changed or modified,
- specific problem in material and curricular design,
- detect problems in the acceptance of curriculum content and texts,
- solutions to problems encountered.

The findings show very high levels of support for bilingual education, a clear recognition of the linguistic and cultural problems discussed above, a need for trained personnel on all levels ranging from teachers to curriculum designers, and that the program needs to be expanded to include areas not presently covered by the program.

Both community leaders and program staff want to include more of the culture specific to each of the ethnic groups, especially in the first four grades, and less use should be made of the Spanish language materials from Managua. At the same time, parents are demanding that children learn Spanish with enough proficiency to go on to study beyond primary school where Spanish is the only language used. In other words: children should learn more than basic or minimal literacy skills in Spanish, and if this is

not possible, parental support will dwindle.

2. Demobilized Soldiers and Returning Refugees

According to CEPAD, a total of 47,842 soldiers have been demobilized from the Sandinista army and 19,720 contras have been repatriated together with 53,349 family members, including a large number of school-age children. In addition, there are 389,000 families who were displaced from areas of intense fighting, who are in the process of returning to their homes. The total number amounts to 509,000 individuals, representing about 13% of the Nicaraguan population, who are being resettled mostly in the northern and eastern sections of the country. In addition to land and employment opportunities, these families are also demanding education for their children.

MED regional personnel in both Matagalpa and Jugalpa related that their primary school enrollment had increased drastically as a result large number of new families. New neighborhoods have sprung up on the outskirts of both cities, many rural communities have expanded, and a number of new settlements have been established. No one could give an exact number of new residents in cities or countryside, but they were painfully aware of the increased pressure on their educational facilities and staff.

In Jugalpa, the total school enrollment in 1990 was about 50,000 and for 1991, the total wanting to register for school was up to 90,000. The limitation imposed by the number and size of schools, the number of teachers, and the availability of textbooks only allowed for an increase of 5,000 students across all grades. The largest demand, however, was for the lower primary grades. Many parents in both rural and urban areas are expressing their dissatisfaction through their community leaders who, in turn, make frequent visits to both regional and municipal MED offices. Overall, the situation is tense and the demands are becoming increasingly vocal and could become violent at any time.

I. Conclusions

1. Economic Conditions:

Poverty in Nicaragua is widespread and increasing at an unknown rate. High rates of malnutrition are a strong indicator of the deteriorating economic circumstances in which most Nicaragua families live, and stunting is the principal nutritional problem, affecting 30-35% of the children in marginal and poor areas of the country. The educational consequences of stunted growth in school-age children include poor cognitive abilities, decreased aerobic activities, and significant reduction in alertness. Important health effects are increased morbidity and mortality rates, a 30% increase in time needed to recuperate from frequent diarrheal episodes, and increased chances that acute respiratory infections turn into pneumonia. All of these consequences have immediate bearing on learning ability, school achievement, grade repetition rates, and school desertion.

The percentage children who underweight or suffering from physical wasting as a consequence of malnutrition is not particularly high. As a result, the vast majority of Nicaraguan children do not appear malnourished, and it is only when height for age is measured that the extremely high rates of stunting become apparent.

2. Political Organization:

Political factionalism and polarization seems to occur in a limited number of areas but is not any kind of generalized phenomenon. Although political factors can be an impediment for educational administration, school projects, and the formation of parental organizations in some areas, most political party organizations, municipal governments, schools, and parental organizations are more concerned with confronting the problems of scarce resources and run-down schools rather than political in-fighting.

3. Community Organization:

Nicaraguan communities have a recent history of organizing themselves into self-help groups and can work effectively with either municipal authorities through the *Comité Comarcal* or with their local schools as members of the *Consejo Consultivo de Padres de Familia*. Furthermore, the teachers interviewed appeared much more willing to work with parents than in certain other parts of Central America, and not a single parent complained about the teachers in terms of unwillingness to work with them or high rates of absenteeism from the school.

The degree of parental support of school project was found to be highly variable but linked to the economic status of the corresponding communities and *municipios*. It is safe to say that if resources are available in the form of outside financing, either partial or complete, most communities have the organizational capabilities and motivation to provide labor for school construction, repairs, and periodic maintenance.

4. Family Structure:

Economic decline and rapid increase in the number of poor families has resulted in a larger number of female headed households. The data indicate that Nicaraguan families are undergoing rapid change, and that stable conjugal relations are on the decrease. The most plausible reason is that high male unemployment leads to men being a financial burden in an already financially precarious household, and men are increasingly deserting their families. Moreover, the economic situation mitigates against the establishment of new households with co-resident parents, leaving mothers and their children to cope on their own with occasional help from relatives and friends. The consequences for primary education are lower enrollments as poor mothers are reluctant to send their children to school, higher dropout rates because childrens' labor is needed to supplement incomes or care for younger siblings while mothers go out to work, and poor school achievement due to malnutrition.

5. School Infrastructure:

The most pressing problem for primary education in all the areas visited was a lack of adequate schools and the deteriorating or substandard condition of the existing schools. Both teachers and parents felt that educational quality was suffering under the current conditions. New or refurbished schools are in immediate danger of being stripped by thieves, and scarce financial resources spent on school construction or repair would be wasted without the proper security personnel.

6. Participation in Adult Education:

Interest and enrollment in adult education courses of any kind will not increase until school infrastructure is improved and maintained. Furthermore, potential students must be offered courses that have perceived benefits in terms of possible future employment and/or income generation.

7. Participation of Girls/Women in Primary Education:

As the number of matrifocal households increases, the pressure for school-age girls to stay home would also go up because single mothers have to go out and work. This conclusion is supported by recent data from studies in Bolivia, showing that children of both sexes spend more time doing household chores, cooking, and taking care of younger siblings as a function of whether or not either or both parents are out working, particularly in times of drastic economic declines.

8. Special Populations:

The bilingual/intercultural program for Miskito, Sumo, and Creole speakers has achieved remarkable coverage in view of limited resources. The lack of appropriate training in bilingual methodologies and the design of curricular materials has severely limited the achievements of the program. Furthermore, up to date sociolinguistic and population data are needed to redesign the curricula and to expand the program to all areas as mandated by law.

The demobilized combatant population and their families presents an especially acute educational problem which does not appear to have been addressed by the current government. A combination of poverty, land disputes, lack of employment, and inadequate educational facilities can lead to increased social unrest and violence. Putting extra financial resources and personnel into the education sector to directly benefit this sector of the population would contribute significantly to ameliorating potential conflict and help these regions return to some semblance of normalcy.

J. Recommendations

1. In order to reverse the nutritional decline, school feeding programs should be instituted, with the cooperation of other donor agencies, to provide an adequate quantity of animal protein to counter the negative effects of stunting.
2. A program of school renovation and construction should be targeted to areas of greatest need, to include parts of Nicaragua with high concentrations of demilitarized populations.
3. A systematic study of the opportunity costs of primary schooling should be undertaken in conjunction with an evaluation of the economic sacrifice associated with the purchase of books, school supplies and other educational expenses.
4. The bilingual/intercultural education program should be redesigned to include recent linguistic and socio-cultural data in the design of appropriate native language curricula and teaching materials. Technical assistance should be provided by experts with bilingual education experience from other Latin American countries.

XI. SPECIAL ISSUES

This chapter discusses a series of areas of special concern in the funding of primary education interventions in Nicaragua. It examines the climate for non-project assistance and the activities of other donors in the primary education sub-sector. In addition issues such as WID, the activities of other donors and radio education are reviewed.

Opportunities for non-project assistance in the form of cash transfer to the education sector exist in areas such as school repair and as a component of a teacher certification program.

The assessment found no bias against females, except in how the new textbooks depict a traditional view of women who remain in the home. The reality in Nicaragua is one of increasing numbers of matrifocal households which may create problems for children who see a disparity between how family structure is depicted at school and their own home situation.

The World Bank is developing a position paper on Nicaragua, the Interamerican Development Bank (IBD) has initiated a Social Investment Fund (SIF), UNICEF is in the process of conducting a socio-economic analysis of the situation in Nicaragua, Norway is supporting the MED with a project in basic rural education, and the *Consejo de Iglesias Evangélicas Pro Alianza Denominacional* (CEPAD) has projects in education, small-scale agricultural production, and emergency disaster relief.

It was found that Nicaragua's past activities and projects using interactive radio in primary education are unknown to the current generation of educators.

A. Non-Project Assistance

In discussions with AID personnel in the LAC bureau and in the USAID/Nicaragua Mission, it became clear that although the terms Program Assistance and Non Project Assistance are often used interchangeably within the Agency, they are not synonymous. Program Assistance is an integrated management approach comprised of strongly linked program goals, strategic objectives, program outputs, and project activities.

Non Project Assistance is a form of development assistance involving cash transfers to governments by donors. These transfers may be of several types: those that are conditioned on the recipient implementing a number of agreed upon policy reforms; those designed to compensate a government for lost revenue (e.g. compensation to bureaucrats laid off during Ministry reform); payments for improving information for policy decisions; support for progressive movements/forces; and direct assistance in implementing policy. Non Project Assistance is often one of several inputs (others being project activities) used by a Mission to achieve its strategic objectives under a Program Assistance strategy. Thus, this section focuses on possible non-project activities that would complement a basic education project.

As discussed in the chapter on school financing, non-project assistance could play a

very significant role in designing successful education interventions. This is especially true for teacher improvement programs and school repair (and perhaps even construction). These areas do not necessarily require any technical assistance, are quite well defined, and thus easily visible.

If non-project assistance is used, conditionality in the sense of cash transfer for policy reform does not seem viable. While there are a number of candidates for policy reform discussed in this report, none are sufficiently well-defined, measurable, and readily implementable that it makes sense to tie desperately needed aid to their achievement. International donor experience seems to have led to decreasing emphasis on conditionality in all sectors, given the problems encountered by developing countries in meeting any set of conditions and the strong developmental and political imperatives to disburse the aid. However, if conditionality is meant, as is sometimes the case, to imply targeting cash transfers to a certain end, then, of course, this is absolutely necessary to achieving the development objectives.

B. WID

The assessment found no bias against females in terms of either access or efficiency of the primary education system. In addition, classroom observations revealed a similar learning environment for both boys and girls. Socially, however, there are an increasing number of single mother headed households living in poverty in Nicaragua. Research in other countries suggests that as the number of matrifocal households increases, the pressure on school-age girls to stay home also increases, as these children spend more time involved in household chores and caring for siblings so that the mother can engage in economic pursuits. Thus, the situation of matrifocal families in Nicaragua must be monitored carefully.

The new textbooks are an area of concern in their depiction of women. One of the new textbooks, *La Vida Moral y Cívico*, has a section in which a father is talking to his children about what well-behaved children should be doing. He says that the father's role is to support his family by working while the mother stays home to take care of house and children.

This traditional view of family role structure is contrary to reality in Nicaragua where a large number of households are matrifocal, and the mothers are the only wage earners. A problem occurs when children of single mothers learn about families in school and then realize that their home situation is different. These children may, in fact, be led to believe their home is abnormal, giving rise to feelings of inferiority and generating anxiety.

An effort should be made to have any future instructional materials represent Nicaraguan society as it currently exists and in a manner consistent with how many children live. Examples should be given of single working mothers, and of families where both co-resident parents work, a reflection of how the majority of Nicaraguan families are attempting to cope with poverty.

C. Other Donor Activity

Other donor activity was investigated through meeting with donor agency representatives in Washington and in Nicaragua. Several of the large multilateral donors such as the World Bank and the International Monetary Fund, are not currently involved in Nicaragua because the country is in arrears on loans.

The World Bank is, however, in the process of developing a position paper on Nicaragua. Representatives visited by the team in Washington suggested that the paper would be completed in April or May. They stated that the Bank was eager to invest in Nicaragua and hoped that the subsector assessment would be made available to them so that their activities could be coordinated with those of AID.

The Interamerican Development Bank (IBD) presently has Social Investment Fund (SIF) activities underway in Nicaragua. These activities are aimed at short-term poverty elevation. They are primarily small construction projects carried out at the community level with autonomous management.

Unicef is in the process of conducting a socio-economic analysis of the situation in Nicaragua. This analysis will serve as a planning document for their investment strategy for the next two years. Representatives feel that the organization will continue to work in the same areas in which it has traditionally worked in Nicaragua. These include: early childhood development, especially the lower grades; non-formal and community education; and education of the disabled. Adolescent females and women of child-bearing age will also be a focus as will out-of-school youth. The organization also provides support to teacher training activities in the form of materials support and deals with areas which are ancillary to primary education such as poverty mapping and monitoring system support.

Norway, with Unesco acting as executing agency, has been supporting the Ministry of Education for the past two years in a project directed at "Curriculum transformation for Basic Education in rural areas". This \$764,000 project is aimed at curriculum transformation in the first four grades of primary school, the redefinition of the curriculum for fifth and sixth grades and the reorientation of Work-Education Schools (ERET).

The goal of a basic education for rural areas is complemented with the development of an information system for decision making and strengthening the planning and administration of basic education at central, regional and local levels. The project has been renewed for another two years beginning in April, 1991.

A second project involving Unesco will be financed by Holland and is scheduled for opening in the second semester of 1991. The project is the establishment of a National System for Improving Education and Human Resources and the transformation and adaptation of the pre-primary and primary school curriculum at the regional and local levels. It also has the goal of improving the initial training of the primary school teachers by restructuring the Normal School curriculum and training the administrative,

technical and teaching personnel.

In addition, the project has a component for the improvement of the planning and administration of basic general education at all levels and for special education elements in three Regions and the Special Zone. Funding for the three-year project was originally US\$ 5,000,000.

The project "Contribution to the Development of Basic Education in the Rural Areas" financed by the Lay Movement of Latin America, began its second step in 1988 and continues until 1992. The project supports the ERET in the development of productive activities and the creation of self-sustaining school eating facilities with agricultural production.

Another ongoing project is "Population Education and Communication". This project has, since 1981, provided basic documents, guides and training for primary education and the Normal Schools on the themes of population, environment and sexual education. This is part of a regional network of projects sponsored by the Fund for Population Education of the United Nations and executed by Unesco.

The sub-regional project "Strengthening the capacity of planning and administration in Central America and Panama" has provided distance training courses regional and local administrators in the past three years. This project has funds from Spain and is also executed by Unesco.

The *Consejo de Iglesias Evangélicas Pro Alianza Denominacional (CEPAD)* has projects in education, small-scale agricultural production, and emergency disaster relief. The education projects are concerned primarily with children in pre-school and use methodologies to actively involve the community in material support, teacher selection and teacher training. The agricultural projects concentrate on the cultivation of basic foods using appropriate technologies consistent with local environmental conditions. Again, the community is involved with both project planning and implementation. CEPAD also works in health and nutrition, having implemented feeding programs using local produce and parental support. Twenty-three health centers nation-wide are participating in CEPAD-sponsored preventive health activities, including regular growth monitoring to detect and treat children suffering from malnutrition.

In addition, the MED has a number of small projects financed by different bilateral donors and organizations. For example, Finland is providing \$152,000 to the Bureau of Adult Education to develop a national implementation strategy and as already mentioned, Italy is providing \$45,000 in assistance in textbooks for post-literate rural adults. Similarly, the Van Leer Foundation is providing \$540,000 for preschool education and Bread for the World is giving \$130,000 of assistance to the bilingual/bicultural education program. Regions and municipalities have also made requests to donors for assistance. (See Appendix XII-1 for a list of all current MED donor assisted projects as well as pending projects).

D. Radio Education

As a result of Nicaragua's previous experience with an AID-funded interactive radio project, the potential for such a project was examined by a local Nicaraguan specialist. The research identified few remnants of the program. A few individuals who were involved in the program have some of the materials and retain positive feelings toward the project. In general, however, it is unknown to the current generation of Nicaraguan educators.

Some infrastructure for radio does, however, exist within Nicaragua. There are several radio stations that carry educational programs and stations with national coverage exist in the country (See Appendix XII-2 for a complete discussion of existing facilities).

Despite the available infrastructure and the fact that instructional radio has met with some success in a number of developing countries, the team feels that at the present time there is not a useful role for radio to play in the education of primary school children. Considerable work would have to go into establishing a nationwide educational radio broadcast capability. Perhaps most importantly, radio systems are significant add-on costs for which there is no room under present circumstances. Finally, structural and organizational problems, e.g. irregular attendance in rural areas, has limited the success radio instruction has achieved elsewhere and these barriers are likely to be even greater in Nicaragua (see Mayo, 1990; Wagner and Kemmerer, 1986). As discussed earlier, this analysis does not rule out other potential uses for radio, for example, in the distance training of teachers.

E. Scholarship Recipients in Soviet Block Countries

The team was asked by USAID/N, as part of their general statistical data gathering effort, to determine the number of Nicaraguan scholarship recipients to be funded by Soviet Block countries in 1991. The primary interest was in high school students who could be potential elementary school teachers on completing their studies. As shown in Table 41, Cuba was the only country funding high school-level students. It was anticipated by the MED that 390 additional scholarships at this level would be funded in 1991. However, at the time of the assessment, the MED was in negotiations with the Cuban government as Cuba had proposed to reduce the support for travel to and from Nicaragua.

Table 43: Scholarships for High School Students

Country	Scholarships in 1990	Total End of 1990	Proposed Scholarships in 1991
Cuba (high school)	230	846	390
Cuba (university)	81	171	75
USSR (university)	77	840	100
Germany (university)	17	160	25
Czechoslovakia (university)	21	143	25
Bulgaria (university)	--	94	--
Hungary (university)	34	34	--
Poland (university)	--	72	--

Source: MED 1991

University scholarships will continue to be offered by several Eastern Block countries if present proposals are ratified. In general, however, the number of scholarships are decreasing as a result of political and economic conditions in these countries.

XII. CONCLUSIONS AND RECOMMENDATIONS

This Chapter summarizes the conclusions and recommendations of the assessment team. These conclusions and recommendations are used as a basis for suggestions on issues of policy dialogue, on possible areas for donor investment in the primary education sub-sector, and on preparatory actions that might be taken prior to a major investment.

A. Conclusions and Recommendations

1. Socio-economic Environment

Conclusions:

Education is functioning within a deeply troubled economic and social context. The decline of 57% in Gross Domestic Product between 1978 and 1990, illustrates the overall drop in levels of social well-being below those of 1970. This situation is mirrored in the disastrous decline in educational expenditures at all levels. The primary education system has been hit particularly hard by these trends: real per student expenditures in 1989 were only 15% of their level in 1970. Likewise, teachers' salaries have dropped tremendously in real terms over the last decade to rank among the lowest of public sector wage earners.

The situation of teachers is, however, similar to that of Nicaragua as a whole. Poverty is widespread and increasing at an unknown rate, and high levels of malnutrition in the form of stunting is the principal nutritional outcome; stunting affects at least 30-35% of school-age children, and an equal number are at risk. The educational and health consequences of stunting are poor cognitive abilities, decreased aerobic activities, reduced alertness, increased mortality and morbidity rates. All have bearing on learning ability, school achievement, grade repetition, and desertion rates.

Another consequence of poverty and economic instability has been an increase in the number of matrifocal families, putting increased pressure on children to join the work force and spend time taking care of younger siblings with a negative effect on school attendance and achievement.

Economic conditions have made communities relatively free of political influence and factionalism. There is a good organizational structure available for school-parent interaction, a prerequisite for projects activities involving parental participation.

Social instability and the economic situation have led to a deterioration of school facilities and increasing vandalism. Both parents and teachers recognize the need to improve school buildings and classroom facilities, and the physical deterioration in many

schools makes effective teaching and learning virtually impossible. All agree that any improvement to the infrastructure must be accompanied by adequate security to prevent theft.

The proposed cost of the new instructional materials are too high for a majority of families and the additional expense comes at a time when many are having difficulties feeding their families. General acceptance by teachers of the new books has been positive, but the books must be used over an entire school year to make an adequate assessment.

The indigenous peoples in the Eastern part of the country have the legal right to receive instruction in their native language, but bilingual/intercultural programs have only covered 30% of the eligible population. The current bilingual program lacks proper linguistic and socio-cultural input to assure acceptance by the indigenous populations.

The demobilized military forces and their families need better access to primary education, but at present many are being turned away from overcrowded schools.

Recommendations:

In order to reverse the nutritional decline and thereby enhance the efficiency of education interventions, school feeding programs should be designed and implemented to provide an adequate quantity of animal protein to counter the negative effects of stunting.

In order to enhance the cost effectiveness of investments in primary education incentives must be created to encourage teachers to remain in education. At present, teachers are likely to leave if any other opportunities come along. In addition, the system is subject to work stoppages as teachers lobby for higher wages.

A program of school renovation and construction should be targeted to areas of greatest need. These should include parts of Nicaragua with high concentrations of demilitarized populations.

Bilingual/intercultural education programs should include recent linguistic and socio-cultural data in the design of appropriate native language curricula and teaching materials. Technical assistance should be provided by experts with bilingual education experience from other Latin American countries.

A study of the direct and opportunity costs of enrolling and maintaining children in primary school should be conducted. Of special focus should be the economic contributions of children in matrifocal families in Nicaragua. A systematic evaluation of the costs of paying for instructional materials should be included in the opportunity cost study and should be carried out toward the end of the current school year.

2. The Education System

a. Primary Education Costs and Financing

Conclusions:

Standard alternatives for financing primary education are not workable, owing to deep and widespread poverty, as well as other reasons. Significant cost containment is not possible given very low teacher salaries. Cost recovery and finance decentralization can do little given widespread poverty. Increased private sector involvement is unlikely for the same reason. Reallocation within education, despite a significant portion of resources going to higher education, does not appear feasible or desirable with the current level of investment.

Two possible sources of resources for education, outside of foreign aid, remain: Intersectoral reallocations, particularly from the still large share of the budget going to defense; and additional revenue from the recent tax reform. Additional taxation may be possible if the economy stabilizes.

The most realistic source of immediate financial help for education is through foreign aid. It is crucial that Nicaragua's arrears are cleared so that the World Bank and the IMF can put together an aid package.

Recommendations:

International donors should work with the World Bank and IMF to help arrange bridging loans to clear up arrears. These should be based on efforts that the UNO government has made in the economic sphere.

Economically, a strategy emphasizing physical plant, instructional materials and, teacher training should dominate for primary education.

b. Access and Efficiency

Conclusions:

Nicaragua has made significant progress in increasing access to primary education. Gross enrollment ratio is now 98%, up from about 80% in the late 1970s. Pre-primary access has increased four-fold, to about 17% of the relevant population. There is no access bias against girls or rural areas. Current levels of gross enrollment compare well with the Central American average of about 90%.

The Nicaraguan primary education system has very low indices of internal efficiency. Only about 22% of the children who enter first grade complete the sixth grade. This compares unfavorably with the rest of Central America where the average is

about 55%. It is impossible to determine the out of school population owing to lack of current census data. However, extrapolations suggest that system inefficiency is related to high levels of repetition and possibly dropout.

Recommendation:

Further applied research is needed to determine the nature of certain problems and to develop policy options. The true nature of the overage and repetition versus dropout phenomena needs to be studied to determine where investments should be made. Greater study of pre-school interventions are also needed, as there is insufficient evidence with existing data to support the expansion.

c. Educational Administration

Conclusions:

Confused and contradictory legal foundations impede reform, regulation, and clear lines of authority for the Nicaraguan Ministry of Education (MED).

Central MED structure impedes appropriate integration and coordination of activities across functional units. In addition, key MED processes, organizational operations, and management tools are out of date and ill defined.

MED middle managers lack training, education, and experience to effectively direct structural and operational reform.

MED has deconcentrated authority in the areas of staffing, discretionary spending, and materials distribution as a basis to decentralize. However, local political organization does not allow for a democratic decentralization at this time.

Recommendations:

Policy dialogue about Civil Service, Labor, and Education law reform is needed. In addition, a condition precedent to any project should be the implementation of the *Ley de Carrera Docente* and the development of working groups for needed bills, regulations, and codification.

Form working groups of prominent public sector administrators, MED leadership, and local management institutes (e.g. INAP, INCAE) to improve structural relationships in MED resulting in a new *reglamento* or *acuerdo*.

A two-phased plan to improve communication, collaboration, operations, and evaluation in MED should be implemented. Phase 1 would be the design and implementation of a Management By Objectives program. Phase 2 would consist of the

design and implementation of Performance Monitoring. These phases would be complemented by in-country management training and staff development to encourage professionalization of the educational administration function.

The regional duplication of function should be eliminated and departmental or municipal level governance for MED should be encouraged.

d. Curriculum and Instruction

Conclusions:

The Curriculum Planning Bureau has a number of experienced classroom teachers who have used instructional materials and have some sense of materials design. They are at present working backwards in attempting to adapt the curriculum to the new AID-financed textbooks rather than developing materials for a curriculum. This results from a lack of training in both the systematic development of modern instructional or learning materials and in automated technology.

The new AID-financed textbooks are colorful and grade level appropriate. However, the content is based on information acquisition rather than on inquiry and problem solving. Language books are not organized around modern whole language acquisition principals, and several of the books are outdated. The books are somewhat stereotypical, especially in their portrayal of nuclear families with men as the only breadwinners.

Nicaragua has the capacity to print new textbooks through a number of different private sector printers, including one in which the MED is presently the major stock holder.

Active student participation and student time-on-task are minimal in Nicaraguan primary classrooms. Observations showed teacher-centered instructional activities dominated the daily schedule. Even the few available instructional aids, such as the blackboard, were used ineffectively.

The physical conditions of many schools increase the difficulty of effective instructional delivery. Many children don't have desks, lights are lacking, roofs leak during the rainy season, and chalkboards are scarred, chipped, broken or too small.

Recommendations:

The MED should begin to create the capability within the Curriculum Planning Bureau to develop its own books and learning materials. The consumable nature of some lower grade books and the generally flimsy nature of the books for the Nicaraguan school environment, will require the restocking of current books for at least another year, if current levels of availability are to be maintained. Thus, the MED should investigate

the feasibility of donor funding for 1992 textbooks.

The Bureau should consider the present textbook program a transition and should begin at once to plan a new program and new instructional materials which would be ready by 1993. This will require training in curriculum development, instructional design, word processing and desktop publishing as well as appropriate reference works and equipment.

In order to stimulate local production, the MED should investigate the feasibility of printing locally developed textbooks in Nicaragua.

Teachers should be trained in classroom management techniques and manipulation of existing instructional aids. This could be done through a series of single concept workshops, including use of the blackboard, which take advantage of the existing in-service training system.

Classroom renovation, especially the provision of student furniture should be a high priority for the MED. Such furniture might be in the form of modular desks and tables which would encourage small group work and peer teaching activities.

e. Teacher Training

At the pre-service level, the 12 Normal Schools graduate about 400 trained teachers annually, only 40% of what is needed to fill demands. The Normal schools, however, offer an infrastructure with the potential to meet the primary teacher labor demand needs as they are the only fully functioning training institutions present in every Region with their own satellites reaching to the municipal level.

Accreditation courses offer the possibility to provide Normal school equivalency to between 7,000 and 14,000 primary teachers without accreditation. This would take five to ten years, assuming no more untrained teachers came into the system and the demands of a student population expected to grow by 40% over the next decade are met.

Regular in-service training is almost non-existent and the MED does not have the resources to assure that education specialists visit teachers. The program also lacks curriculum guides, and teaching materials, and some of the specialists are in the same position of lacking certification that affects the teachers.

Recommendations:

Stimulate alternative strategies of teacher training such as: evaluation and quick accreditation of experienced teachers; salary incentives tied to certification and teacher performance; promotion of municipal level in-service training using local teachers; active recruitment of secondary graduates for Normal Schools; and revitalization of curriculum of all training programs.

Promote the development of a network of decentralized, innovative Teacher Training Centers responsible for the coordination of the pre and in-service training of all primary school teachers, utilizing existing institutions in each of the Regions.

Improve education specialists' ability to carry out in-service training by providing them with rough terrain bicycles. Motorcycles would also be a possibility but will have recurring fuel and maintenance costs which the MED at present is unable to absorb.

f. Adult Education

Conclusions:

The low school completion rate found in Nicaragua makes focus on adult education imperative if a literate populace is to be formed in the near future. However, during the past ten years, the supply of literacy and non-formal basic adult education has decreased dramatically. This drop in the percentage of the illiterate populations served is directly attributable to a decrease in the number of individuals willing to serve as teachers on a strictly voluntary basis. The lack of teachers, who are responsible for recruiting students, has had the effect of lowering enrollment in the programs as well.

All instructional materials were found to be adequate except for the politicized Language and Social Science text books of the *Educación Básico de Adultos* (EBA) program. However, the Bureau of Adult Education is considering options for adapting or developing a complete integrated series of texts for this program. The literacy materials are pedagogically sound and can be used in the future. The *Educación Popular Básico al Campo* (EPB) books are inexpensive to produce, contain practical information for the rural adult, and are considered pedagogically superior to the literacy and EBA textbooks.

Recommendations:

The MED should begin incentive programs such as prizes or food supplements as a way of compensating non-formal adult education teachers and increasing teacher participation and retention. To further encourage teacher and student participation, the MED should begin a social marketing campaign, aimed at promoting the value of being literate and of volunteerism.

The controversial Language and Social Science text books of the EBA program should be replaced. Ideally, this should be accomplished through the development of a series of new texts that reflect Nicaraguan reality and take advantage of the practical materials now being developed. Time and cost factors must, however, be weighed by the Bureau, AID, and the textbook procurement contractor to determine if a more cost-effective strategy would be the adaptation of Mexican or other Central American post-literacy adult education series.

B. Preparatory Activities

Lengthy procedures are often required by international donor agencies to fund a major investment in education. Thus, short-term preparatory activities have been identified by the assessment team. These activities, which are based on the preceding conclusions and recommendations, would help build toward the interventions discussed in the next sections of this chapter. Ideally preparatory activities should become the first phase of an eventual project. The activities can accomplish several objectives:

- Maintain commitment and involvement among those participants in the target sector who have been involved in the assessment.
- Condition appropriate expectations among personnel in the target sector about the focus, scope, and magnitude of the project to come.
- Maintain continuity in communication between USAID and target sector personnel.
- Identify key changes in the target sector which take place after an assessment is carried out.
- Prepare human and material resources in the target sector for effective project implementation.

1. Teacher Training

As mentioned in the recommendations, a certification program is needed to qualify and give credit for experience to those teachers who have gained their skills on-the-job rather than through academic learning. Such a system will help to ensure quality by determining how merit is to be demonstrated, evaluated, and compensated. Evaluation also helps to diagnose training deficiencies which need to be remedied in an in-service training program. Thus, some of the initial work required for a teacher training and certification program can be accomplished as a preparatory or bridging activity. The following are suggested activities:

- **Form Teacher Training and Certification Group.** This group will develop the standards for certification of teachers. It will address the question of how to evaluate *empiricos*. It will represent the various interests and should include representative from the following groups:
 - MED *Direcciones Superior* and *Formación y Capacitación Docente*
 - Teachers' Unions
 - MED *Regiones* and *Municipios*
 - Normal Schools
 - Representative of Private School Associations

- **Develop Certification Criteria.** The group mentioned above will develop a list of criteria and initial rating instruments to qualify teachers. These will be tested in relation to actual teacher activities in the schools.
- **Review and Feedback.** The criteria will be taken to the various groups represented for their comments. These comments and observations will be incorporated in the development of the criteria.
- **Test.** The proposed criteria should undergo a testing phase in which they are actually applied to teachers in the field to determine their appropriateness. This test phase will also yield further refinement of the criteria, and help to diagnose training needs.
- **Pilot Implementation.** After design is completed, the system will be implemented in stages in order to work out any final problems. It will begin to accredit teachers and collect training information.

2. Instructional Materials

A capacity must be built in the MED for identification, acquisition, design, and production of instructional materials. Building this capacity requires financial investment for materials, and time investment for the preparation of the organizational and human resources. A preparatory activity in this area is the initial preparation of the curriculum development unit for desktop publishing capacity with which the MED will eventually produce its own textbooks and other materials. This will consist of the following steps.

- **Negotiation with *Informática*.** The computers at the MED are the result of a Unesco donation to the *Informática* unit; an agreement must be made with them to allow use of this equipment and software by Curriculum Development.
- **Word Processing Training for Support Staff.** The secretarial staff and those who will do data entry in Curriculum Development will be trained in morning sessions.
- **On Site Training in Desk Top Publishing.** An on-the-job training model will be used to train staff in curriculum production. This will be done through short courses and hands-on training which will be focused on the production of an actual module for dissemination.

3. Administration

MED organization and capacity to manage must be improved. The success of all other activities are dependent on this. Two conditions need to be achieved. One is the ability of MED administration to manage people, implement projects, and to operate

efficiently on a day-to-day basis. The other is the capacity of organizational units to communicate and cooperate, and the ability of the organization to operate efficiently on a day-to-day basis.

The first suggested preparatory activity in this area is training. MED managers need more skills in how to manage and motivate people. These skills are necessary to the MBO system that has been recommended. All training should be on-the-job and should include on-site diagnosis, technical assistance through assignments, and follow up. Courses would include:

- **Basic Administrative Training.** This would present the rudiments of Administrative knowledge for MED upper management. Topics might include:
 - Organizational Behavior
 - Systems Approach
 - Financial Systems
 - Project Administration
 - Project Evaluation
 - Policy Development
 - Personnel Process
 - Job Design

- **Human Relations Training.** This would complement the above training. Topics might include:
 - One Minute Management
 - Communication
 - Negotiation and Conflict Resolution
 - Organizational Excellence
 - Time Management
 - Group Dynamics

The second suggested activity would be a study of the MED organization and structure and staffing. This study would provide information for an eventual reorganization of the MED, and staffing reform. It would take place in two phases:

- **MED Organization and Reform.** This study would examine the present structure for the MED. It would make recommendations on how to strengthen Central MED organization and how to structure the education system for better governance. It would also look at the question of decentralization and present options for use by the MED and USAID in a project.

- **Staffing Study.** A staffing study could be initiated at the same time as the study mentioned above. Once the above study was completed a staffing level and pattern for the MED could be designed that fit the suggested organizational structure and system governance.

4. Educational Efficiency

An important activity that would provide direction to any investment aimed at educational efficiency would be a study of repetition. The serious inefficiency problem identified has two causes: repetition and dropping out. It has been shown that there is little understanding of inefficiency even at the definitional level: the system does not know the real share of repetition or dropping out, or the relationship between these phenomena. Age group population data must be gathered if the percentage of the cohort of dropouts, repeaters and non-entrants are to be accurately measured.

A survey, involving a representative sample of communities can provide answers in a few months. Procedures for such a survey would involve drawing a representative sample of communities along dimensions of size and geographical location. Recruiting and training data collection personnel, and field testing the survey instrument. The study would include: asking parents the number of children in the family and the grades in which they are enrolled or those they reached; conducting a census of school age children in the community and tracing their attendance patterns; and verifying attendance information through school records.

An additional study that would assist in the design of interventions in primary education would be an analysis of the costs to parents for enrolling and maintaining their children in school. This study could be conducted either through a survey technique or by ethnographic procedures. It would consist of: identifying what parents, especially single mothers perceive the costs of sending children to primary school to be; analyzing what proportion of the annual income is spent in direct school-related expenses occasioned by the school attendance of their children; estimating the indirect economic costs in terms of lost household labor contributions while the children are absent from home attending school; assessing the extent to which there is a relation between dropout rates and the opportunity costs of sending children to primary school; and determining the extent to which and the level at which primary school dropouts enter the labor force.

C. Options for Policy Dialogue

1. Sector Level

Following are the suggestions for sector level policy dialogue. These are specific to the education system and the MED. Some require dialogue at the level of National Assembly, others at the MED level.

a. MED Budget

Care must be taken by USAID to see that any internal GON budget reallocation actually becomes an increase in real spending on target sectors. For example, the reductions in military spending mentioned above, are programmed into the MED budget as a special item. However, they are not yet available to disburse and it is still not clear if the level of funding will be what has been authorized.

Accordingly, USAID should consider conditioning further assistance at the sector level on appropriate outcomes. This conditionality could be in the form of sector specific non project assistance. Other, project related options might include bi-lateral agreements for project funding or conditions precedent to sector specific projects.

b. Professional Laws and Structure

One area that requires strict conditionality (perhaps even as a condition precedent to a project) is that of the implementation of the *Ley de Carrera Docente*. This law has already been passed by the Assembly. It lacks implementation which rests on the adoption by MED of a *reglamento* (regulation). Adoption of the regulation requires consultation with the unions, which has delayed its adoption. While the stress on professionalization in the law is needed, it is complicated by including grievance procedures, salary schedules, and qualifications. These conditions tie the hands of MED. Two approaches are worthy of examination:

- Dialogue over the implementation of the law. This could take several forms. One could be to offer aid, such as technical assistance, to the democratic unions conditioned on their help in adoption. Another could be to condition sectoral assistance, especially that pointed at improving salaries or working conditions on the progress of the MED and union working groups in adopting the regulation of the law.
- Amending the Career Law. This would make the law easier to pass, not as global, and less costly. This would require policy dialogue on the level of the National Assembly, the MED, and the unions. It could be included in any more general legislative package on legal reform.

Reform of the enabling legislation of the MED and the education system itself is needed. The changes in the enabling legislation of the MED could best be effected by opening a dialogue, in much the same fashion as mentioned above, with the National Assembly. Other interested parties would also have to be involved. Some reforms could be made at the level of the MED itself. Initiation of these changes might be made conditions precedent for a project, or their development might be made part of a project. They would include changing, repealing, or replacing the following:

- *Ley Orgánica del Ministerio de Educación*
- *Ley de Educación Primaria*
- *Ley de Educación Secundaria*
- *Instructivo de la Nomenclatura*
- *Ley de los Ministerios*

- *Reglamento del Ministerio de Educación*

D. Options for Donor Investment in Primary Education

At the request of AID, the team has prioritized potential areas of AID or other international donor involvement in the sub-sector, based on the findings of the assessment. As shown in the discussion of the financing of primary education, the most viable alternative funding source in the immediate future is bilateral or multilateral donor agencies. The assessment points to a series of conditions that if ameliorated through foreign aid would improve the efficiency of primary education.

1. Investment in Dietary Supplements

As pointed out previously, the overriding poverty in which much of the Nicaraguan populace lives, makes food supplements for school children an extremely high priority. High levels of malnutrition in the form of stunting is affecting at least 30-35% of school-age children, and an equal number are at risk. The educational and health consequences of stunting are poor cognitive abilities, decreased aerobic activities, reduced alertness, increased mortality and morbidity rates. All have a bearing on learning ability, school achievement, grade repetition, and desertion rates.

The MED with other donors, such as the World Food Organization, should ensure that at least the popular "vaso de leche" program is reinstated in Nicaraguan primary schools. The team's recommendation is that the program go beyond just milk and provide a snack or midday meal for school children.

The program could be started on a small scale regional basis using the following criteria for selecting participating areas or regions:

- A high level of malnutrition. The program should obviously deal with those most at risk.
- A high percentage of sixth grade classrooms. Children of 13-15 are among the most susceptible to the effects of malnutrition of the type detected by the team. School provides a vehicle for reaching at least some of this age group.
- A high level of conflict among political parties. A highly visible program can have a unifying effect on communities. This is especially likely when community members participate in planning and carrying out part of the program as with the local distribution of milk or food.

A program could take advantage of the existing AFA food distribution system in delivering commodities to the municipal level and this program might serve as the implementing unit for the program.

2. Incentives to Teachers

All of the investigations undertaken in the assessment have pointed out the dire economic condition of Nicaraguan primary school teachers. Thus, a second priority is that economic assistance in some form be provided to encourage primary school teachers to remain in the school system and thereby make investments in learning materials and teacher training worthwhile. In addition, as a 40% increase in the student population is projected during the decade of the 1990s, new teachers must be attracted to the profession.

Donors could also work with the MED to increase the AFA food supplement program already in effect or to ensure that teachers receive their AFA allotments each month by providing logistics training or vehicular support. As AFA consists of locally produced products, such an investment may also provided some stimulus to agricultural production.

Creating a package of certification training and teacher performance tied to incentives is another possible avenue. This would, however, need to be coordinated with improvements in the current pre-service and in-service training system and would require a well-developed evaluation system.

Increased incentives for teachers have the potential to attract new manpower into the profession, to reduce inefficiency caused by work stoppages and to improve investments made in training and instructional materials by reducing turnover.

3. Investment in Instructional Materials Development

Material resources that assist the teacher in providing children with time to practice academic skills are crucial to improved basic education quality. These include anything the teacher can use as a tool to enrich the learning environment such as posters, newspapers or texts. Textbooks have been an emphasis in the early days of the UNO government through assistance from AID. Texts have been shown to be positively related to improved learning in most developing countries. As a long-term investment, however, texts face difficulties in production and distribution, as trained personnel may not be available to coordinate these functions. Implementation of a textbook development program also requires specialized expertise in text design and production to complement local subject matter specialists.

Several phases would be involved in supporting a textbook development investment. The initial phase would be the restocking of those textbooks which this assessment has shown to be consumable. These are the first through third grade texts. Replacement of the textbooks could be handled through the current textbook

procurement contractor but might also be a component of a project aimed at instruction delivery enhancement.

Concurrent with this activity, the development and piloting of a system to develop alternative materials and to identify and acquire existing Nicaraguan materials would begin. It should include the following activities:

- **Form Review Committee.** A committee will be formed in the MED to identify existing Nicaraguan Materials and review them for possible acquisition. They will have charge of completing the following tasks:
 - Identify materials and authors
 - Contact authors and request samples
 - Develop selection criteria
 - Develop bidding and award procedure
- **Alternative Curriculum Development Training.** Training will be provided for the Curriculum development unit on innovative and alternative curriculum development. This will include low-cost easily obtainable alternatives for classroom materials such as newspapers, teacher designed materials, and materials found in the home.

A second phase would be actual materials development. This phase would include coordination with the Unesco curriculum development project to establish grade level expectations, set performance objectives, and outline evaluation procedures. It is likely that a series of workshop will be needed to familiarize design personnel with modern concepts of curriculum development such as context-based learning, programmed learning, cognitive strategies and peer teaching.

Curriculum Planning Bureau personnel would receive on the job training in developing learning modules in individual subject areas using the desktop publishing skills developed in the bridging activity discussed previously. Modules would be field tested in classrooms and the results of such formative evaluation activities used for refining the draft materials.

A third phase would be production of materials and distribution to schools. This phase would actually overlap with the previous one as materials would be produced by subject for each grade in ongoing timeframes. The curriculum development unit will identify local and regional publishing houses and request bids for services in actual materials production. It will also coordinate with the MED ATM to develop a system of inventory, warehousing, and distribution.

4. Investment in School Infrastructure

Implementation of most instructional intervention is enhanced where school physical conditions are adequate. School renovation and maintenance activities have been shown to be important in providing a minimum acceptable environment in which

learning can take place. Such activities can also serve as a catalyst for community involvement activities.

The assessment team suggests that investment to ensure the integrity of the physical plant is an important part of instructional delivery and should be a complementary component of the investment in instructional materials design discussed above. The strategy should be to start where conditions are the worst. MED has identified some priority schools for repair. This list can be augmented through a survey of regional or municipal personnel. The project could be conducted in phases, starting with those areas experiencing the greatest pressure to the system because of an influx of in-migration and those where a large number of classes are conducted in private homes.

The focus of the intervention should be on improvements that will allow target populations to take full advantage of the school as a learning center. This means the installation of lights so that classrooms can be used at night for adult education, the provision of blackboards, chalk, and student furniture to allow practice of academic skills, and the arrangement of security to ensure the integrity of the investments.

A subsequent phase could be encouraging school maintenance through existing parents committees and training school and community personnel in techniques to deal with school vandalism.

5. Investment in Strengthening Teacher Training Systems

A third component of instructional delivery is the teacher, who is a critical part of efforts to improve classroom learning. Enhancing the quality of teaching is a complementary area to infrastructure improvement and materials development.

The main focus of an intervention in teacher training systems would be the conversion of Normal Schools into teacher support or pedagogical centers. These centers would not only provide pre-service training, but would coordinate in-service training and communication opportunities for teachers.

As mentioned, an initial phase would be to develop a teacher certification and performance program tied to increased compensation and improving the quality and capacity of the Normal Schools to meet current and future teacher manpower demands. A second phase would use distance learning techniques and create new instructional programs aimed directly at improving classroom teaching.

6. Investment in Adult and Preschool Education

Adult education is extremely important to ensure against a rapid decline in literacy, given the low efficiency of the primary school system. As mentioned previously, strategies for compensating teachers must be found if students are to be recruited into

the program. This is a low cost component of the MED budget that has great potential returns to investment.

Finally, it should be cautioned that preschool education not be sacrificed in any budget restructuring. Although information is presently lacking to assess the cognitive or social impact of the preschool program, international literature has found generally positive effects from the preschool experience. As preschool education takes up only 2% of the MED budget, it should not be cut until in-depth studies of program effectiveness are conducted.

7. Investment in Administrative Reform.

In order to strengthen the MED administration and make it capable of supporting instructional initiatives of the proposed instructional interventions, it is suggested that administrative reform be developed as a separate high priority project. As in all plans for reform, the chances of success are increased by careful attention to the precursor conditions for success. Often, good ideas for instructional reform are weighted down by present administrative conditions and drowned in a sea of resistance to change. In addition, MED needs so many things that without careful planning and separation of interventions, implementation efforts may become diffuse and inefficient. Thus an independent approach to administrative reform will allow the attention to detail that builds on small successes, institutionalizes them, and overcomes resistance to change by making it an ongoing process.

It is suggested that a complementary, two phased project be developed for MED administrative reform. Following is a description of the project phases:

Phase 1 - Improving Communication, Collaboration, and Project Management: Management by Objectives

Management systems which set goals personally in face to face meetings and also use meetings to track and report progress are commonly known as MBO systems. They encourage communication, motivation, team building, coordination, and planning. These systems are especially useful in an environment where managerial outputs are changing from year to year, and where there will be a short term, project orientation. This phase would consist of series of steps: policy dialogue, improving system accountability and responsiveness, and structural reorganization.

Phase 2 - Focusing on Processes, Operations, and Feedback: a Performance Monitoring System

Some administrative systems focus on operations management. Performance monitoring systems set and track goals without face to face bargaining, using indicators to measure progress. They are most effective in areas in which the outputs to be tracked are relatively routine and unchanging, such as the number of teachers hired and their average education, or the proficiency of students on an examination. Steps in developing this phase would include: improving operating systems, improving key sub systems,

developing program monitoring and evaluation, and improving output quality.

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APPENDICES

APPENDIX I

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Table 1. Population

4-6 age group	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Total	263634	270766	278145	286183	294510	303137	312076	321340	331656	342362	353473	365006
Urban	130525	135927	141553	147613	153932	160522	167394	174560	182314	190413	198871	207706
Rural	133109	134839	136591	138570	140578	142616	144683	146780	149342	151949	154601	157300
Male	133926	137627	141462	145532	149752	154123	158667	163376	168633	174092	179763	185653
Female	129708	133138	136683	140651	144758	149009	153409	157964	163023	168269	173710	179353
Urban Male	66127	68975	71945	75095	78383	81815	85397	89136	93165	97376	101778	106378
Urban Female	64398	66953	69608	72518	75549	78706	81996	85424	89149	93037	97094	101328
Rural Male	67800	68553	69517	70437	71369	72313	73270	74240	75468	76716	77985	79275
Rural Female	65309	66186	67074	68134	69210	70302	71413	72540	73874	75233	76616	78025
7-12 age group	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Total	451578	464094	477048	491185	505838	521027	536775	553104	570761	589079	608085	627808
Urban	231707	241322	251337	262157	273444	285219	297501	310313	323855	337989	352740	368135
Rural	219871	222772	225711	229028	232394	235809	239274	242790	246905	251090	255345	259673
Male	228342	234713	241315	248621	256205	264078	272253	280744	289734	299070	308764	318832
Female	223236	229381	235733	242564	249633	256949	264522	272360	281026	290009	299321	308976
Urban Male	115013	119957	125113	130749	136639	142795	149227	155949	162921	170203	177812	185760
Urban Female	116694	121365	126223	131408	136805	142424	148274	154364	160935	167786	174928	182375
Rural Male	113329	114756	116201	117871	119565	121283	123026	124794	126814	128866	130952	133072
Rural Female	106542	108016	109510	111157	112828	114525	116248	117996	120091	122223	124393	126602
4-6 age group	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
Total	376979	386468	396255	406348	416760	427501	435334	443362	451593	460030	468680	
Urban	216933	224703	232753	241090	249727	258673	265728	272976	280422	288071	295928	
Rural	160046	161765	163502	165258	167033	168828	169605	170386	171171	171959	172751	
Male	191773	196635	201656	206841	212195	217726	221749	225878	230115	234462	238923	
Female	185207	189833	194599	199508	204565	209776	213584	217484	221478	225568	229756	
Urban Male	111186	115285	119535	123942	128511	133249	136970	140794	144725	148765	152919	
Urban Female	105747	109418	113217	117148	121215	125424	128759	132183	135697	139306	143010	
Rural Male	80587	81350	82121	82898	83684	84476	84780	85084	85390	85697	86005	
Rural Female	79460	80415	81381	82360	83350	84352	84825	85302	85780	86262	86746	
7-12 age group	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
Total	648277	668508	689473	711199	733716	757056	775556	794603	814214	834407	855200	
Urban	384202	400157	416776	434086	452115	470893	486488	502600	519246	536444	554211	
Rural	264075	268351	272697	277113	281601	286163	289068	292003	294968	297963	300989	
Male	329289	339618	350332	361446	372977	384941	394425	404197	414266	424644	435339	
Female	318987	328890	339141	349752	360739	372115	381131	390407	399948	409763	419862	
Urban Male	194064	202352	210993	220004	229400	239197	247315	255709	264387	273360	282638	
Urban Female	190138	197806	205783	214081	222715	231696	239173	246892	254859	263083	271573	
Rural Male	135225	137267	139339	141442	143577	145745	147110	148488	149879	151283	152701	
Rural Female	128849	131084	133358	135671	138024	140418	141958	143515	145089	146680	148289	

Source:

INEC-CBLADE Projections, pp. 59-62, disaggregated into single-year age groups by the method of Beers coefficients, and interpolated logarithmically into single calendar years.

Table 2. Population growth rates

4-6 age group	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Total	2.7%	2.7%	2.9%	2.9%	2.9%	2.9%	3.0%	3.2%	3.2%	3.2%	3.3%	3.3%
Urban	4.1%	4.1%	4.3%	4.3%	4.3%	4.3%	4.3%	4.4%	4.4%	4.4%	4.4%	4.4%
Rural	1.3%	1.3%	1.4%	1.4%	1.4%	1.4%	1.4%	1.7%	1.7%	1.7%	1.7%	1.7%
7-12 age group	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Total	2.8%	2.8%	3.0%	3.0%	3.0%	3.0%	3.0%	3.2%	3.2%	3.2%	3.2%	3.3%
Urban	4.1%	4.1%	4.3%	4.3%	4.3%	4.3%	4.3%	4.4%	4.4%	4.4%	4.4%	4.4%
Rural	1.3%	1.3%	1.5%	1.5%	1.5%	1.5%	1.5%	1.7%	1.7%	1.7%	1.7%	1.7%
4-6 age group	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999		
Total	2.5%	2.5%	2.5%	2.6%	2.6%	1.8%	1.8%	1.9%	1.9%	1.9%		
Urban	3.6%	3.6%	3.6%	3.6%	3.6%	2.7%	2.7%	2.7%	2.7%	2.7%		
Rural	1.1%	1.1%	1.1%	1.1%	1.1%	0.5%	0.5%	0.5%	0.5%	0.5%		
7-12 age group	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999		
Total	3.1%	3.1%	3.2%	3.2%	3.2%	2.4%	2.5%	2.5%	2.5%	2.5%		
Urban	4.2%	4.2%	4.2%	4.2%	4.2%	3.3%	3.3%	3.3%	3.3%	3.3%		
Rural	1.6%	1.6%	1.6%	1.6%	1.6%	1.0%	1.0%	1.0%	1.0%	1.0%		

Source:

Calculated from above.

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Table 3. Pre-primary education enrollment, by region and year

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	217	407	2300	2478	4453	5710	5531	6588	6513	7395	6432	4369
Region II	1528	1763	3159	4084	5812	7788	9210	10898	11326	11927	10516	10918
Region III	3822	9456	12976	13083	16708	20454	23135	26027	28379	26201	25410	22166
Region IV	1507	1853	5664	9591	10512	11998	10536	12348	12372	12325	11081	NA
Region V	254	583	1833	3289	3853	4413	3817	5589	5901	5965	3484	NA
Region VI	850	1967	2201	3631	3968	5087	5678	5438	5876	4875	4567	NA
RAAN	256	1593	1127	721	2583	2784	2333	2334	2519	2289	1590	NA
RAAS	518	555	1083	1351	1794	1347	1932	2239	2399	2159	718	NA
Zona Esp.	48	115	186	306	480	976	612	1108	1350	1091	1178	NA
Total	9000	18292	30524	38534	50163	60557	62784	72569	76635	74227	64976	61292
Growth rate	103%	67%	26%	30%	21%	4%	16%	6%	-3%	-12%	-6%	
Urban	8314	14771	26689	31846	39301	49409	51402	58434	60979	56164	56164	
Rural	686	3521	3835	6688	10862	11148	11382	14135	15656	18063	8812	
% Urban	92%	81%	87%	83%	78%	82%	82%	81%	80%	76%	86%	
% Rural	8%	19%	13%	17%	22%	18%	18%	19%	20%	24%	14%	
Pop. 4-6	263634	274455	282164	294510	303137	312076	321340	331656	342362	353473	365006	376979
Pop. growth	NA	2.8%	NA	2.9%	2.9%	3.0%	3.2%	3.2%	3.2%	3.3%	3.3%	
GER	3%	7%	11%	13%	17%	20%	20%	23%	23%	22%	18%	17%

Sources:

- 1978-84, Estadísticas Educativas Sexenio 1978-1984, Dirección General de Planificación, Departamento de Estadísticas, MED, Dic. 1988, p. 10.
- 1985, Boletín Informativo de Matricula Inicial 1985, pp. 12, 13.
- 1986, Boletín Informativo de Matricula Inicial, 1986, p. 25.
- 1987, Boletín Informativo de Matricula Inicial 1987, p. 24.
- 1988, Boletín Informativo de Matricula Inicial 1988, pp. 19, 20.
- 1989, Información preliminar del Boletín Informativo 1989, no page number in original.
- 1990 Total only: Síntesis Evaluativa del Primer Semestre de 1990, MED, Sept. 1990, table 1 (un-numbered in the original).
- Note that the population for years 1979-80 and 1981-90 is the simple average of the population for those calendar years. Therefore rates of growth involving those years are meaningless.

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Table 4. Primary school enrollment, by region and year

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	36477	38087	46143	55198	58261	54084	53925	58404	64640	70072	67566	75357
Region II	65010	70217	83362	95336	102015	101236	95997	106265	107765	109495	108911	118784
Region III	102719	108092	128664	139189	147272	152635	154731	161138	163082	161288	161709	167507
Region IV	77199	84912	92957	100127	97756	101227	98446	105015	107602	108911	108455	117647
Region V	32006	42607	44001	46147	46577	41771	40875	42616	47701	47924	45645	49995
Region VI	31011	36946	40445	52672	55144	59169	59899	64798	68754	67675	67774	70593
RAAN	13402	17820	17324	5650	14094	12512	12225	11979	15254	17772	19313	18782
RAAS	8676	8507	9266	9620	10259	7796	8329	9131	9770	10805	10103	10187
Zona Esp.	3140	4127	5005	5301	5278	3887	4003	4582	5438	6015	6136	5850
Total	369640	411315	472167	509240	536656	534317	528430	563928	590006	599957	595612	634702
Growth rate	11.3%	14.8%	7.9%	5.4%	-0.4%	-1.1%	6.7%	4.6%	1.7%	-0.7%	6.6%	
Cumulative growth rate 78-90:			5.0%									
True OLS growth rate 78-90:			4.1%									
Pop. 7-12	451578	470571	484116	505838	521027	536775	553104	570761	589079	608085	627808	648277
Growth of pop.	NA	2.9%	NA	3.0%	3.0%	3.0%	3.2%	3.2%	3.2%	3.2%	3.3%	
GER	81.9%	87.4%	97.5%	100.7%	103.0%	99.5%	95.5%	98.8%	100.2%	98.7%	94.9%	97.9%

Sources:

- 1978-84, Estadísticas Educativas, Sexenio 1978-1984, Dir. General de Planificación, Depto. de Estadísticas., MED., Dic. 1988, p. 16.
 1985, Bol. Informativo de Matricula Inicial, p. 16.
 1986, Bol. Informativo de Matricula Inicial, p. 30.
 1987, Bol. Informativo de Matricula Inicial, p. 29.
 1988, Bol. Informativo de Matricula Inicial, p. 25.
 1989, Informacion preliminar del Bol. Informativo de Matricula Inicial, no page number.
 1990, Informacion preliminar del Bol. Informativo de Matricula Inicial, no page number.

Notes:

Primary refers to grades 1 to 6.

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Table 5. Primary and pre-primary school enrollment and the war

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Total Enr.	378640	429607	502691	547774	586819	594874	591214	636497	666641	674184	660588	695994
Growth of enrol.		510	731	451	390	81	-37	453	301	75	-136	354
War Damage Deaths	0	2	46	205	870	1408	1452	969	1808	1413	.	.
Excessive mil. exp.		0	0	0	214	246	333	324	372	444	.	.

Sources:

Number of deaths: Nicaragua En Cifras, Diez Anios, p. 57.

Excessive military expenditure: Nicaragua en Cifras, Diez Anios, p. 58.

"Excessive" is undefined.

Note:

Growth of enrollment is absolute growth, in hundreds.

Enrollment includes pre-primary and primary.

Table 6. Primary urban school enrolment, by region and year

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	20337	17661	20559	24426	29568	26875	28251	28772	30643	33469	32359	34375
Region II	43460	44161	50298	53045	56969	55656	56309	60369	59319	61455	60093	64341
Region III	86689	88131	103108	114373	121498	127783	128770	132616	127862	123333	134331	134618
Region IV	49960	50316	52843	56351	55331	56551	59208	61169	56368	59757	60320	63800
Region V	13866	13368	14992	18544	20571	18737	17812	20030	19428	20930	21235	23857
Region VI	16798	16156	18462	21277	22964	23973	27079	27590	26875	27452	26686	27887
RAAN	4069	5087	3896	2585	5342	5560	6316	6487	6200	7127	6942	7518
RAAS	5627	4810	5656	6219	6114	6060	5772	6553	7517	6946	6837	6666
Zona Esp.	1225	1132	1008	1184	1254	1336	1555	1867	1935	2024	2108	1864
All Urb.	242031	240822	270822	298004	319611	322531	331072	345453	336147	342493	350911	364926
All Rur.	127609	170493	201345	211236	217045	211786	197358	218475	253859	257464	244701	269776
Growth urb.	-0.5%	12.5%	10.0%	7.3%	0.9%	2.6%	4.3%	-2.7%	1.9%	2.5%	4.0%	
Growth rur.	33.6%	18.1%	4.9%	2.8%	-2.4%	-6.8%	10.7%	16.2%	1.4%	-5.0%	10.2%	
Rural/Total	35%	41%	43%	41%	40%	40%	37%	39%	43%	43%	41%	43%
Cum. growth urban 1978-89:			3.8%									
Cum. growth rural 1978-89:			7.0%									
Urb. pop. 7-12	231707	246330	256747	273444	285219	297501	310313	323855	337989	352740	368135	384202
Rur. pop. 7-12	219871	224241	227370	232394	235809	239274	242790	246905	251090	255345	259673	264075
Urban GER	104.5%	97.8%	105.5%	109.0%	112.1%	108.4%	106.7%	106.7%	99.5%	97.1%	95.3%	95.0%
Rural GER	58.0%	76.0%	88.6%	90.9%	92.0%	86.5%	81.3%	88.5%	101.1%	100.8%	94.2%	102.2%

Sources:

1978-84, Estadísticas Educativas, Sexenio 1978-1984, Dir. General de Planificación, Depto. de Estadísticas., MED, Dic. 1988, p. 18, 23, 28, 33, 38, 43.

1985, Bol. Informativo de Matricula Inicial, p. 17.

1986, Bol. Informativo de Matricula Inicial, p. 30.

1987, Bol. Informativo de Matricula Inicial, p. 33.

1988, Bol. Informativo de Matricula Inicial, p. 26.

1989, Informacion preliminar del Bol. Informativo de Matricula Inicial, no page number.

1990, Informacion preliminar del Bol. Informativo de Matricula Inicial, no page number.

Table 7. Urban primary enrollment as percent of total

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	56%	46%	45%	44%	51%	50%	52%	49%	47%	48%	48%	46%
Region II	67%	63%	57%	56%	56%	55%	59%	57%	55%	56%	55%	54%
Region III	84%	82%	80%	82%	82%	84%	83%	82%	78%	76%	83%	80%
Region IV	65%	59%	57%	56%	57%	56%	60%	58%	52%	55%	56%	54%
Region V	43%	31%	34%	40%	44%	45%	44%	47%	41%	44%	47%	48%
Region VI	54%	44%	46%	40%	42%	41%	45%	43%	39%	41%	39%	40%
RAAN	30%	29%	22%	46%	38%	44%	52%	54%	41%	40%	36%	40%
RAAS	65%	57%	61%	65%	60%	78%	69%	72%	77%	64%	68%	65%
Zona Esp.	39%	27%	20%	22%	24%	34%	39%	41%	36%	34%	34%	32%
% Urban, All Reg	65%	59%	57%	59%	60%	60%	63%	61%	57%	57%	59%	57%
% Rural, All	35%	41%	43%	41%	40%	40%	37%	39%	43%	43%	41%	43%

Source:

Calculated from above data.

Table 8. Private subsidized primary school enrolment, by region and by year

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	1180	1230	1335	1630	3120	2041	.	2838	2611	2522	2944	3247
Region II	5289	3532	4915	6879	7355	5834	.	6935	6814	7200	7503	7730
Region III	17576	14620	15721	19301	19947	20440	.	21024	22190	21605	16186	18990
Region IV	6169	6405	5343	8195	8504	8913	.	8724	5869	7611	5714	5777
Region V	1746	1485	2086	2396	2518	2667	.	2547	3093	2269	2897	317.
Region VI	1495	1638	995	1836	3168	3707	.	4677	4212	4482	2717	1378
RAAN	1170	2204	1716	640	1763	1403	.	1149	2744	2454	2011	3598
RAAS	1698	1505	2991	2654	3601	3362	.	2855	3192	3554	4316	4270
Zona Esp.	17	0	0	64	0	66	.	0	0	0	0	0
Total	36340	32619	35102	43595	49976	48433	.	50749	50725	51697	44288	48163
Growth rate	-10.2%	7.6%	24.2%	14.6%	-3.1%	.	.	-0.0%	1.9%	-14.3%	8.7%	
Cumulative growth rate 78-89:			2.6%									

Sources:

1978-84, Estadísticas Educativas, Sexenio 1978-1984, Dir. General de Planificación, Depto. de Estadísticas., MED, Dic. 1988, p. 20, 25, 30, 35, 40, 45.

1986, Bol. Informativo de Matricula Inicial, p. 30.

1987, Bol. Informativo de Matricula Inicial, p. 31.

1988, Bol. Informativo de Matricula Inicial, p. 27.

1989, Información preliminar del Bol. Informativo de Matricula Inicial, no page number.

1990, Información preliminar del Bol. Informativo de Matricula Inicial, no page number.

Table 9. Private non-subsidized primary school enrolment, by region and by year

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	534	157	155	250	73	157	.	141	146	154	204	163
Region II	5785	4924	5076	6355	6330	5722	.	5936	5747	5294	7371	7500
Region III	6422	9595	9742	10647	12388	12568	.	14338	13538	14204	18279	13260
Region IV	2206	1655	3454	2860	2318	2576	.	3097	3203	3472	5339	6226
Region V	259	420	190	0	0	0	.	101	218	0	289	0
Region VI	1405	436	1857	2097	1035	1212	.	971	1072	1207	2607	4562
RAAN	317	421	0	0	0	211	.	993	356	427	595	0
RAAS	380	462	148	983	0	0	.	0	0	0	0	0
Zona Esp.	0	0	0	0	0	0	.	0	0	0	0	0
Total	17308	18070	20622	23196	22144	22446	.	25577	24280	24758	34684	31711
Growth rate	4.4%	14.1%	12.5%	-4.5%	1.4%	.	.	-5.1%	2.0%	40.1%	-8.6%	
Cumulative growth rate 78-89:			5.7%									

Sources:

1978-84, Estadísticas Educativas, Sexenio 1978-1984, Dir. General de Planificación, Depto. de Estadísticas., MED, Dic. 1988, p. 21, 26, 31, 36, 41, 46.

1986, Bol. Informativo de Matricula Inicial, p. 30.

1987, Bol. Informativo de Matricula Inicial, p. 31.

1988, Bol. Informativo de Matricula Inicial, p. 27.

1989, Información preliminar del Bol. Informativo de Matricula Inicial, no page number.

1990, Información preliminar del Bol. Informativo de Matricula Inicial, no page number.

Table 10. Public primary school enrollment as percentage of total primary enrollment

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	95%	96%	97%	97%	95%	96%	.	95%	96%	96%	95%	95%
Region II	83%	88%	89%	86%	87%	89%	.	88%	89%	89%	86%	87%
Region III	77%	78%	80%	78%	78%	78%	.	78%	78%	78%	79%	81%
Region IV	89%	91%	91%	89%	89%	89%	.	89%	92%	90%	90%	90%
Region V	94%	96%	95%	95%	95%	94%	.	94%	93%	95%	93%	94%
Region VI	91%	94%	93%	93%	92%	92%	.	91%	92%	92%	92%	92%
RAAN	89%	85%	90%	89%	87%	87%	.	82%	80%	84%	87%	81%
RAAS	76%	77%	66%	62%	65%	57%	.	69%	67%	67%	57%	58%
Zona Esp.	99%	100%	100%	99%	100%	98%	.	100%	100%	100%	100%	100%
All	85%	88%	88%	87%	87%	87%	.	86%	87%	87%	87%	87%

Source:

Calculated from data above.

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Table 11. Private subsidized primary school enrollment as percentage of total primary enrollment

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	3.2%	3.2%	2.9%	3.0%	5.4%	3.8%	.	4.9%	4.0%	3.6%	4.4%	4.3%
Region II	8.1%	5.0%	5.6%	7.2%	7.2%	5.8%	.	6.5%	6.3%	6.6%	6.9%	6.5%
Region III	17.1%	13.5%	12.2%	13.9%	13.5%	13.4%	.	13.0%	13.6%	13.4%	10.0%	11.3%
Region IV	8.0%	7.5%	5.7%	8.2%	8.7%	8.8%	.	8.3%	5.5%	7.0%	5.3%	4.9%
Region V	5.5%	3.5%	4.7%	5.2%	5.4%	6.4%	.	6.0%	6.5%	4.7%	6.3%	6.3%
Region VI	4.8%	4.4%	2.5%	3.5%	5.7%	6.3%	.	7.2%	6.1%	6.6%	4.0%	2.0%
RAAN	8.7%	12.4%	9.9%	11.3%	12.5%	11.2%	.	9.6%	18.0%	13.8%	10.4%	19.2%
RAAS	19.6%	17.7%	32.3%	27.6%	35.1%	43.1%	.	31.3%	32.7%	32.9%	42.7%	41.9%
Zona Esp.	0.5%	0.0%	0.0%	1.2%	0.0%	1.7%	.	0.0%	0.0%	0.0%	0.0%	0.0%
All	9.8%	7.9%	7.4%	8.6%	9.3%	9.1%	.	9.0%	7.6%	8.6%	7.4%	7.6%

Source:

Calculated from data above.

Table 12. Private non-subsidized primary school enrollment as percentage of total primary enrollment

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	1.5%	0.4%	0.3%	0.5%	0.1%	0.3%	.	0.2%	0.2%	0.2%	0.3%	0.2%
Region II	8.9%	7.0%	5.7%	6.7%	6.2%	5.7%	.	5.6%	5.3%	4.8%	6.8%	6.3%
Region III	6.3%	8.9%	7.6%	7.6%	8.4%	8.2%	.	8.9%	8.3%	8.8%	11.3%	7.9%
Region IV	2.9%	1.9%	3.7%	2.9%	2.4%	2.5%	.	2.9%	3.0%	3.2%	4.9%	5.3%
Region V	0.8%	1.0%	0.4%	0.0%	0.0%	0.0%	.	0.2%	0.5%	0.0%	0.6%	0.0%
Region VI	4.5%	1.2%	4.6%	4.0%	1.9%	2.0%	.	1.5%	1.6%	1.8%	3.8%	6.5%
RAAN	2.4%	2.4%	0.0%	0.0%	0.0%	1.7%	.	8.3%	2.3%	2.4%	3.1%	0.0%
RAAS	4.4%	5.4%	1.6%	10.2%	0.0%	0.0%	.	0.0%	0.0%	0.0%	0.0%	0.0%
Zona Esp.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	.	0.0%	0.0%	0.0%	0.0%	0.0%
All	4.7%	4.4%	4.4%	4.6%	4.1%	4.2%	.	4.5%	4.1%	4.1%	5.8%	5.0%

Source:

Calculated from data above.

Table 13. Primary school enrollment by grade and by year, total system

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
1	132493	172167	203639	213500	202290	173594	164188	190828	208442	214760	215931	225273
2	70057	73874	94062	109028	112302	127273	98602	96405	103343	117932	118329	130024
3	57347	57381	60397	73332	91065	89634	99914	82270	82176	86597	89108	96898
4	46362	45077	48391	48680	59109	67870	67110	73637	68355	71678	72331	78448
5	35279	34911	36202	36146	42633	47373	63990	53134	58535	56344	52545	55529
6	28102	27905	29446	28554	29257	28573	34626	39541	44120	52646	47368	46710
Total	369640	411315	472167	509240	536656	534317	528430	535815	564971	599957	595612	632882

Sources:

1978-84, Estadísticas Educativas, Sexenio 1978-1984, Dir. General de Planificación, Depto. de Estadísticas, MED, Dic. 1988, pp. 18, 23, 28, 33, 38, 43.

1985, Bol. Informativo de Matricula Inicial, p. 16.

1986, Bol. Informativo de Matricula Inicial, p. 33.

1987, Bol. Informativo de Matricula Inicial, p. 32.

1988, Bol. Informativo de Matricula Inicial, pp. 28 and 40.

1989, Informacion preliminar del Bol. Informativo de Matricula Inicial, no page number.

1990, Informacion preliminar del Bol. Informativo de Matricula Inicial, no page number.

Table 14. Net flow coefficients, total system

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989
1	0.558	0.546	0.535	0.526	0.629	0.568	0.587	0.542	0.566	0.551	0.602
2	0.819	0.818	0.780	0.835	0.798	0.785	0.834	0.852	0.838	0.756	0.819
3	0.786	0.843	0.806	0.806	0.745	0.749	0.737	0.831	0.872	0.835	0.880
4	0.753	0.803	0.747	0.876	0.801	0.943	0.792	0.795	0.824	0.733	0.768
5	0.791	0.843	0.789	0.809	0.670	0.731	0.618	0.830	0.899	0.841	0.889
6	.	.	.	0.322	0.275	0.314	0.249	0.289	0.325	0.320	0.291
1-5, real cohort	.	.	.	.	0.216	0.201	0.194	0.207	0.260	0.273	0.284
1-6, real cohort	0.214	0.255	0.198	0.251	0.201	0.230	0.177	0.253	0.307	0.214	0.296
1-6, X-section											

Source:

Calculated from data above.

Table 15. Private (subsidized and non-subsidized) primary school enrollment by grade and by year

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
1	12796	12242	15284	19302	18493	16313	.	.	.	19505	20150	19351
2	9686	9426	10305	13915	15326	15717	.	.	.	14218	15086	15252
3	8892	8419	8966	10521	13214	13049	.	.	.	12164	13553	13821
4	8253	7745	7954	8804	9843	11129	.	.	.	10669	11437	11877
5	7370	6826	6999	7600	8342	8018	.	.	.	9942	9903	10759
6	6651	6031	6216	6649	6902	6653	.	.	.	9961	8843	8819
Total	53648	50689	55724	66791	72120	70879	.	73017	75005	76459	78972	79879

Sources:

1978-84: Estadísticas Educativas, Sexenio 1978-1984, Dir. General de Planificación, Depto. de Estadísticas., MED, Dic. 1988, p. 20, 21, 25, 26, 30, 31, 35, 36, 40, 4145, 46.
 1986, Bol. Informativo de Matrícula Inicial, p. 32, not avail. by grade.
 1987, Bol. Informativo de Matrícula Inicial, p. 31, not avail. by grade.
 1988, Bol. Informativo de Matrícula Inicial, pp. 34, 37, 42, 43.
 1989, Información preliminar del Bol. Informativo de Matrícula Inicial, sin página.
 1990, Información preliminar del Bol. Informativo de Matrícula Inicial, sin página.

Table 16. Net flow coefficients, private

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989
1	.	.	.	.	.	.	.	.	.	.	.
2	0.737	0.842	0.910	0.794	0.850	.	.	.	.	0.773	0.757
3	0.869	0.951	1.021	0.950	0.851	.	.	.	.	0.953	0.916
4	0.871	0.945	0.982	0.936	0.942	.	.	.	.	0.940	0.876
5	0.827	0.904	0.955	0.948	0.815	.	.	.	.	0.928	0.941
6	0.818	0.911	0.950	0.908	0.798	.	.	.	.	0.889	0.891
1-5	.	.	.	0.652	0.655	.	.	.	.	.	.
1-6, real cohort	.	.	.	.	0.520	.	.	.	0.609	.	.
1-6, X-section	0.377	0.623	0.828	0.607	0.396	.	.	.	0.539	0.542	.
						.	.	.	.	0.572	0.509

Source:

Calculated from data above.

Table 17. Public primary school enrollment by grade and by year

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
1	119697	159925	188385	194198	163797	157281	.	.	.	195255	195781	205922
2	60371	64448	83757	95113	96976	111556	.	.	.	103714	103243	114772
3	48455	48962	51431	62811	77851	76585	.	.	.	74433	75555	83077
4	38109	37332	40437	39876	49266	56741	.	.	.	61009	60894	66571
5	27909	28085	29203	28546	34291	39355	.	.	.	46402	42642	44770
6	21451	21874	23230	21905	22355	21920	.	.	.	42685	38525	37891
Total	315992	360626	416443	442449	464536	463438	.	462798	489966	523498	516640	553003

Source:

Calculated as the difference between total and private.

Table 18. Net flow coefficients, public

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989
1											
2	0.538	0.524	0.505	0.499	0.607	.	.	.	.	0.529	0.586
3	0.811	0.798	0.750	0.819	0.790	.	.	.	.	0.728	0.805
4	0.770	0.826	0.775	0.784	0.729	.	.	.	.	0.818	0.881
5	0.737	0.782	0.706	0.860	0.799	.	.	.	.	0.699	0.735
6	0.784	0.827	0.750	0.783	0.639	.	.	.	.	0.830	0.889
1-5	.	.	.	0.286	0.246	.	.	.	.
1-6, real cohort	.	.	.	.	0.183	.	.	.	0.295	.	.
1-6, X-section	0.194	0.223	0.155	0.216	0.178	.	.	.	0.232	0.245	.
						.	.	.	.	0.183	0.272

Source:

Calculated from data above.

Table 19. Primary enrollment by grade and by year, total system, urban

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
1	65823	70651	87712	100763	97104	83082	83384	89639	99335	97421	102297	101371
2	44813	43414	51021	61297	65537	74873	56489	56691	59123	64801	67945	73730
3	41030	39212	41032	45983	58909	58579	65995	52922	52224	52979	55930	59830
4	36410	34764	36599	36482	40512	46720	46815	50978	46708	47400	49513	52564
5	29467	28768	29463	29201	33560	35805	49976	41119	43840	40545	39421	41970
6	24488	24013	24995	24278	23985	23472	28413	31534	34917	39347	35805	35461
Total	242031	240822	270822	298004	319607	322531	331072	321883	336147	342493	350911	364926

Sources:

1978-84, Estadísticas Educativas, Sexenio 1978-1984, Dir. General de Planificación, Depto. de Estadísticas., MED, Dic. 1988, pp. 18, 23, 28, 33, 38, 43.

1985, Bol. Informativo de Matricula Inicial, p. 17.

1986, Bol. Informativo de Matricula Inicial, p. 34.

1987, Bol. Informativo de Matricula Inicial, p. 33.

1988, Bol. Informativo de Matricula Inicial, pp. 29, 40.

1989, Informacion preliminar del Bol. Informativo de Matricula Inicial, no page number.

1990, Informacion preliminar del Bol. Informativo de Matricula Inicial, sin pagina.

Table 20. Net flow coefficients, total system, urban

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989
1											
2	0.660	0.722	0.699	0.650	0.771	0.680	0.680	0.660	0.652	0.697	0.721
3	0.875	0.945	0.901	0.961	0.894	0.881	0.937	0.921	0.896	0.863	0.881
4	0.847	0.933	0.889	0.881	0.793	0.799	0.772	0.883	0.908	0.935	0.940
5	0.790	0.848	0.798	0.920	0.884	1.070	0.857	0.860	0.868	0.832	0.848
6	0.815	0.869	0.824	0.821	0.699	0.794	0.631	0.870	0.898	0.883	0.900
1-5, real cohort	.	.	.	0.510	0.507	0.570	0.398	0.451	0.488	0.473	0.468
1-6, real cohort	.	.	.	.	0.357	0.402	0.360	0.347	0.405	0.431	0.425
1-6, X-section	0.315	0.469	0.368	0.416	0.338	0.407	0.266	0.401	0.413	0.413	0.455

Source:
Calculated from data above.

Table 21. Primary enrollment by grade and by year, total system, rural

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
1	66670	101516	115957	112737	105186	90512	80804	101189	109107	117339	113634	123902
2	25244	30460	43041	47731	46765	52400	42113	39714	44220	53131	50384	56294
3	16317	18169	19365	27349	32156	31055	33919	29348	29952	33618	33178	37068
4	9952	10313	11792	12198	18597	21150	20295	22659	21647	24278	22818	25884
5	5812	6143	6739	6945	9073	11568	14014	13015	14695	15799	13124	13559
6	3614	3892	4451	4276	5272	5101	6213	8007	9203	13299	11563	11249
Total	127609	170493	201345	211236	217049	211786	197358	213932	228624	257464	244701	267956

Sources:
Calculated by difference between the total and urban.

Table 22. Net flow coefficients, total system, rural

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989
1											
2	0.457	0.424	0.412	0.415	0.498	0.465	0.491	0.437	0.487	0.429	0.495
3	0.720	0.636	0.635	0.674	0.664	0.647	0.697	0.754	0.760	0.624	0.736
4	0.632	0.649	0.630	0.680	0.658	0.654	0.668	0.738	0.811	0.679	0.780
5	0.617	0.653	0.589	0.744	0.622	0.663	0.641	0.649	0.730	0.541	0.594
6	0.670	0.725	0.635	0.759	0.562	0.537	0.571	0.707	0.905	0.732	0.857
1-5, real cohort	.	.	.	0.136	0.114	0.121	0.115	0.140	0.175	0.162	0.134
1-6, real cohort	.	.	.	.	0.077	0.061	0.069	0.082	0.126	0.128	0.139
1-6, X-section	0.086	0.083	0.062	0.107	0.076	0.070	0.084	0.111	0.198	0.072	0.145

Source:
Calculated from data above.

Table 23. Enrollment by grade and by year, urban private (includes subsidized and non-subsidized)

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
1	10714	10019	12674	16290	16318	13071	.	.	.	16885	17112	15651
2	8519	8327	8961	12387	14154	13572	.	.	.	12822	13695	13426
3	7991	7620	7939	9478	12288	11625	.	.	.	11135	12440	12515
4	7462	7167	7138	8109	9214	10057	.	.	.	9814	10692	10930
5	6735	6422	6337	7085	7902	7308	.	.	.	9301	9294	10010
6	6132	5752	5617	6214	6551	6182	.	.	.	9112	8327	8214
Total	47553	45307	48666	53563	66427	61815	.	65147	.	69069	71560	70746

Sources:

1978-84: Estadísticas Educativas, Sexenio 1978-1984, Dir. General de Planificación, Depto. de Estadísticas., MED, Dic. 1988, p. 20, 21, 25, 26, 30, 31, 35, 36, 40, 41, 45, 46.

1986, Bol. Informativo de Matricula Inicial, p. 32, not avail. by grade.

1987, Bol. Informativo de Matricula Inicial, p. 31, not avail. by grade.

1988, Bol. Informativo de Matricula Inicial, pp. 35, 38, 42, 43.

1989, Informacion preliminar del Bol. Informativo de Matricula Inicial, sin pagina.

1990, Informacion preliminar del Bol. Informativo de Matricula Inicial, sin pagina.

Table 24. Net flow coefficients, private urban

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989
1											
2	0.777	0.894	0.977	0.869	0.832	.	.	.	.	0.811	0.785
3	0.894	0.953	1.058	0.992	0.821	.	.	.	.	0.970	0.914
4	0.897	0.937	1.021	0.972	0.818	.	.	.	.	0.960	0.879
5	0.861	0.884	0.993	0.974	0.793	.	.	.	.	0.947	0.936
6	0.854	0.875	0.981	0.925	0.782	.	.	.	.	0.895	0.884
1-5, real cohort	.	.	.	0.738	0.729	.	.	.	0.712	.	.
1-6, real cohort	.	.	.	.	0.577	.	.	.	0.558	0.637	.
1-6, X-section	0.458	0.618	1.028	0.755	0.347	.	.	.	.	0.641	0.521

Source:

Calculated from data above.

Table 25. Enrollment by grade and by year, rural private (includes subsidized and non-subsidized)

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
1	2082	2223	2610	3012	2175	3242	.	.	.	2620	3038	3700
2	1167	1099	1344	1528	1172	2145	.	.	.	1396	1391	1826
3	901	799	1027	1043	926	1424	.	.	.	1029	1113	1306
4	791	578	816	695	629	1072	.	.	.	855	745	947
5	635	404	662	515	440	710	.	.	.	641	609	749
6	519	279	599	435	351	471	.	.	.	849	516	605
Total	6095	5382	7058	7228	5693	9064	.	7870	.	7390	7412	9133

Sources:

Calculated as differences between data above.

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Table 26. Net flow coefficients, private rural

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989
1											
2	0.528	0.605	0.585	0.389	0.986	.	.	.	.	0.531	0.601
3	0.685	0.934	0.776	0.606	1.215	.	.	.	.	0.797	0.939
4	0.642	1.021	0.677	0.603	1.158	.	.	.	.	0.724	0.851
5	0.511	1.145	0.631	0.633	1.129	.	.	.	.	0.712	1.005
6	0.439	1.483	0.657	0.682	1.070	.	.	.	.	0.805	0.993
1-5, real cohort	.	.	.	0.211	0.319	.	.	.	0.198	.	.
1-6, real cohort	.	.	.	.	0.226	.	.	.	0.390	0.159	.
1-6, X-section	0.052	0.980	0.128	0.061	1.676	.	.	.	.	0.176	0.480

Source:
Calculated from data above.

Table 27. Enrollment by grade and by year, urban public

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
1	55109	60632	75038	84473	80786	70011	.	.	.	80536	85185	85720
2	36294	35087	42060	48910	51383	61301	.	.	.	51979	54250	60304
3	33039	31592	33093	36505	46621	46954	.	.	.	41844	43490	47315
4	28940	27597	29461	28373	31298	36663	.	.	.	37586	38821	41634
5	22732	22346	23126	22116	25658	28497	.	.	.	31244	30127	31960
6	19356	18261	19378	18064	17434	17290	.	.	.	30235	27478	27247
Total	194478	195515	222156	238441	253180	260716	.	256736	.	273424	279351	294180

Sources:
Calculated as differences between data above.

Table 28. Net flow coefficients, urban public

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989
1											
2	0.637	0.694	0.652	0.608	0.759	.	.	.	.	0.674	0.708
3	0.870	0.943	0.868	0.953	0.914	.	.	.	.	0.837	0.872
4	0.835	0.933	0.857	0.857	0.786	.	.	.	.	0.928	0.957
5	0.772	0.838	0.751	0.904	0.911	.	.	.	.	0.802	0.823
6	0.803	0.867	0.781	0.788	0.674	.	.	.	.	0.879	0.904
1-5, real cohort	.	.	.	0.466	0.470	.	.	.	0.446	.	.
1-6, real cohort	.	.	.	.	0.314	.	.	.	0.374	0.392	.
1-6, X-section	0.287	0.443	0.284	0.354	0.335	.	.	.	.	0.369	0.440

Source:
Calculated from data above.

Table 29. Enrollment by grade and by year, rural public

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
1	64588	99293	113347	109725	103011	87270	.	.	.	114719	110596	120202
2	24077	29361	41697	46203	45593	50255	.	.	.	51735	48993	54468
3	15416	17370	18338	26306	31230	29631	.	.	.	32589	32065	35762
4	9161	9735	10976	11503	17968	20078	.	.	.	23423	22073	24937
5	5177	5739	6077	6430	8633	10858	.	.	.	15158	12515	12810
6	3095	3613	3852	3841	4921	4630	.	.	.	12450	11047	10644
Total	121514	165111	194287	204008	211356	202722	.	206062	.	250074	237289	258823

Sources:

Calculated as differences between data above.

Table 30. Net flow coefficients, rural public

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
1	.	.	.	.	.	.	.	.	.	.	.	.
2	0.455	0.420	0.408	0.416	0.488	.	.	.	.	0.427	0.492	.
3	0.721	0.625	0.631	0.676	0.650	.	.	.	.	0.620	0.730	.
4	0.631	0.632	0.627	0.683	0.643	.	.	.	.	0.677	0.778	.
5	0.626	0.624	0.586	0.750	0.604	.	.	.	.	0.534	0.580	.
6	0.698	0.671	0.632	0.765	0.536	.	.	.	.	0.729	0.850	.
1-5, real cohort	.	.	.	0.134	0.109	.	.	.	.	.	.	.
1-6, real cohort	.	.	.	.	0.072	.	.	.	0.174	.	.	.
1-6, X-section	0.091	0.069	0.060	0.10	0.066	.	.	.	0.121	0.127	.	.
						.	.	.	.	0.070	0.138	.

Source:

Calculated from data above.

Table 31. Enrollment by grade and by year, male

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
1	.	.	.	.	.	.	83589	97475	105869	108231	110062	116444
2	.	.	.	.	.	.	48351	47146	50582	57365	57646	64512
3	.	.	.	.	.	.	46620	39276	39081	41158	41782	45945
4	.	.	.	.	.	.	31200	33771	31557	33392	33565	36445
5	.	.	.	.	.	.	28094	24061	26244	25350	23757	25586
6	.	.	.	.	.	.	13017	17148	19218	22548	20501	21113
Total	.	.	.	.	.	.	250871	258877	272551	288044	287313	310045
Male pop.	228342	231528	238014	256205	264078	272253	280744	289734	299070	308764	318832	329289
Male GER	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	89.4%	89.3%	91.1%	93.3%	90.1%	94.2%

Sources:

1985, Bol. Informativo de Matricula Inicial, p. 16.

1986, difference between female and total.

1987, difference between female and total.

1988, difference between female and total.

1989, difference between female and total.

1990, difference between female and total.

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Table 32. Net flow coefficients, male

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989
1
2	0.56	0.52	0.54	0.53	0.59
3	0.81	0.83	0.81	0.73	0.80
4	0.72	0.80	0.85	0.82	0.87
5	0.77	0.78	0.80	0.71	0.76
6	0.61	0.80	0.86	0.81	0.89
1-5	0.28	0.26
1-6, real cohort	0.45
1-6, X-section	0.16	0.21	0.26	0.18	0.28

Source:

Calculated from data above.

Table 33. Enrollment by grade and by year, female

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
1	.	.	.	.	.	.	80599	93353	102573	106529	105869	108929
2	.	.	.	.	.	.	50251	49259	52761	60567	60683	65512
3	.	.	.	.	.	.	53294	42994	43095	45439	47326	50953
4	.	.	.	.	.	.	35910	39866	36798	38286	38766	42003
5	.	.	.	.	.	.	35896	29073	32291	30994	28788	29943
6	.	.	.	.	.	.	21609	22393	24902	30098	26867	25597
Total	.	.	.	.	.	.	277559	276938	292420	311913	308299	322937
Female pop.	223236	226308	232557	249633	256949	264522	272360	281026	290009	299321	308976	318987
Female GER	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	101.9%	98.5%	100.8%	104.2%	99.8%	101.2%

Sources:

1985, calculated as difference between female and total.

1986, Bol. Informativo de Matricula Inicial, p. 33.

1987, Bol. Informativo de Matricula Inicial, p. 32.

1988, Bol. Informativo de Matricula Inicial, pp. 28 and 40.

1989, Informacion preliminar del Bol. Informativo de Matricula Inicial, no page number.

1990, Informacion preliminar del Bol. Informativo de Matricula Inicial, sin pagina.

Table 34. Net flow coefficients, female

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989
1
2	0.61	0.57	0.59	0.57	0.62
3	0.86	0.87	0.86	0.78	0.84
4	0.75	0.86	0.89	0.85	0.89
5	0.81	0.81	0.84	0.75	0.77
6	0.62	0.86	0.93	0.87	0.89
1-5	0.36	0.32
1-6, real cohort	0.52
1-6, X-section	0.20	0.29	0.35	0.25	0.32

Source:

Calculated from data above.

Table 35. Repetition rates

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1989
1	0.27	0.27	0.29	.	.
2	0.15	0.15	0.12	.	.
3	0.12	0.11	0.12	.	.
4	0.07	0.09	0.09	.	.
5	0.05	0.07	0.07	.	.
6	0.03	0.04	0.04	.	.

Sources:

1986-88: direct communication from Jose Celaya, Asesor del MED.

Table 36. Dropout rates

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
1	0.26	0.24	0.27	.	.
2	0.1	0.1	0.21	.	.
3	0.12	0.1	0.16	.	.
4	0.17	0.14	0.24	.	.
5	0.14	0.06	0.2	.	.
6	0	0	0	.	.

Sources:

1986-88: direct communication from Jose Celaya, Asesor del MED.

Table 37. Promotion rates

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
1	0.47	0.49	0.44	.	.
2	0.75	0.75	0.67	.	.
3	0.76	0.79	0.72	.	.
4	0.76	0.77	0.67	.	.
5	0.81	0.87	0.73	.	.
6

Sources:

Calculated from data above.

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Table 38. Primary school teacher supply data, by year and region

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	901	1048	1268	1537	1732	1797	.	2118	2310	2383	2321	2455
Region II	1637	1924	2300	2547	2871	2978	.	3234	3390	3159	3370	3349
Region III	3021	3345	3467	3625	3962	4341	.	3894	4080	3884	4357	4342
Region IV	2213	2463	2723	2967	3041	3408	.	3278	3340	3169	3376	3482
Region V	804	1136	1435	1358	1536	1469	.	1495	1521	1613	1522	1599
Region VI	757	984	1027	1311	1469	1626	.	1703	1916	1987	2038	2036
RAAH	309	572	576	208	493	435	.	354	533	527	640	590
RAAS	252	279	319	297	357	285	.	329	391	322	352	380
Zona Esp.	92	143	203	255	178	147	.	188	217	239	184	169
Total	9986	11894	13318	14105	15639	16486	.	16593	17698	17283	18160	18402
Total Urban	7302	7692	7580	8247	9067	9835	.	9354	9790	8403	9741	9908
Total Rural	2684	4202	5738	5858	6572	6651	.	7239	7908	8880	8419	8494

Sources:

1978-84: Estadísticas Educativas, Sexenio 1978-1984, Dir. General de Planificación, Depto. de Estadísticas., MED, Dic. 1988, p. 174, 178.

1986-1990: Preliminary Information from Estadísticas Educativas, Sexenio 1985-1990. MED, Dic. 1988, p. 174, 178.

1986-1990: Preliminary Information from Estadísticas Educativas, Sexenio 1985-1990.

Table 39. Primary school certified teacher supply

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	690	729	711	756	862	678	.	772	939	885	1463	1616
Region II	1229	1378	1525	1492	1807	1715	.	1737	1876	1618	2357	2513
Region III	2275	2054	2070	2370	2712	2678	.	2374	2343	2160	2857	2797
Region IV	1876	1559	2148	2407	2454	2695	.	2276	2379	2120	2537	2576
Region V	423	545	762	620	664	394	.	453	479	450	669	748
Region VI	495	451	526	642	607	466	.	525	545	472	687	765
RAAH	74	107	145	49	202	86	.	66	83	56	222	188
RAAS	93	96	122	64	113	43	.	86	99	90	122	175
Zona Esp.	49	86	100	166	22	20	.	44	16	16	29	30
Total	7204	7005	8109	8566	9343	8775	.	8333	8759	7867	10943	11408
Total Urban	5704	5210	5346	5808	6367	6420	.	6543	6666	5785	7551	7606
Total Rural	1500	1795	2763	2758	2976	2355	.	1790	2093	2082	3392	3802

Sources:

1978-84: Estadísticas Educativas, Sexenio 1978-1984, Dir. General de Planificación, Depto. de Estadísticas., MED, Dic. 1988, p. 174, 178.

1986-1990: Preliminary Information from Estadísticas Educativas, Sexenio 1985-1990.

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Table 40. Primary school certified teachers as percent of total primary teachers

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	77%	70%	56%	49%	50%	38%	.	36%	41%	37%	63%	66%
Region II	75%	72%	66%	59%	63%	58%	.	54%	55%	51%	70%	75%
Region III	75%	61%	60%	65%	68%	62%	.	61%	57%	56%	66%	64%
Region IV	85%	63%	79%	81%	81%	79%	.	69%	71%	67%	75%	74%
Region V	53%	48%	53%	46%	43%	27%	.	30%	31%	28%	44%	47%
Region VI	65%	46%	51%	49%	41%	29%	.	31%	28%	24%	34%	38%
RAAN	24%	19%	25%	24%	21%	20%	.	19%	16%	11%	35%	32%
RAAS	37%	34%	38%	22%	32%	15%	.	26%	25%	28%	35%	46%
Zona Esp.	53%	60%	49%	65%	12%	14%	.	23%	7%	7%	16%	18%
Total	72%	59%	61%	61%	60%	53%	.	50%	49%	46%	60%	62%
Urban	78%	68%	71%	70%	70%	65%	.	70%	68%	69%	78%	77%
Rural	56%	43%	48%	47%	45%	35%	.	25%	26%	23%	40%	45%

Sources:

Calculated from data above.

Note:

These percentages may be somewhat misleading, as there is a category of teachers who are neither qualified nor unqualified, but "unknown." This category represents around 6-7% of the total. There is no a priori reason to believe that the unknown are likely to be qualified, however, and so there is no reason to believe these percentages NECESSARILY understate the true proportion of qualified teachers.

Table 41. Private (subsidized and non-subsidized) primary school teacher supply data, by year and region

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	66	56	44	58	84	31	.	86	87	61	93	101
Region II	383	277	315	388	421	385	.	398	384	309	447	427
Region III	969	945	738	835	931	1034	.	974	975	807	978	891
Region IV	389	329	255	343	332	355	.	368	295	281	323	359
Region V	87	76	84	75	84	96	.	87	114	58	108	110
Region VI	132	81	86	112	130	150	.	137	152	135	159	169
RAAN	54	106	67	21	57	56	.	63	124	62	87	117
RI/AS	75	70	97	81	94	124	.	93	120	103	133	141
Zona Esp.	1	0	0	2	0	3	.	0	0	0	0	0
Total	2156	1940	1726	1915	2133	2234	.	2206	2251	1816	2328	2315
Total Urban	1993	1787	1515	1718	1961	1939	.	1972	1985	1568	2079	2030
Total Rural	163	153	211	197	172	295	.	234	266	248	249	285

Sources:

1978-84: Estadísticas Educativas, Sexenio 1978-1984, Dir. General de Planificación, Depto. de Estadísticas., MED, Dic. 1988, p. 176, 177, 180, 181.

1986-1990: Preliminary Information from Estadísticas Educativas, Sexenio 1985-1990.

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Table 42. Private primary school certified teacher supply

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	47	44	40	44	49	8	.	62	65	55	76	84
Region II	255	141	207	277	306	252	.	275	275	239	386	382
Region III	591	419	376	542	589	575	.	671	604	542	753	679
Region IV	249	163	194	271	248	264	.	309	236	234	292	317
Region V	59	42	48	42	49	54	.	57	72	43	97	87
Region VI	89	39	54	64	76	75	.	89	84	80	100	118
RAAN	23	43	23	4	20	13	.	17	37	24	45	50
RAAS	31	32	35	8	26	33	.	41	51	40	64	90
Zona Esp.	0	0	0	0	0	0	.	0	0	0	0	0
Total	1344	923	977	1252	1363	1274	.	1521	1424	1257	1813	1807
Total Urban	1236	856	873	1119	1252	1141	.	1409	1298	1138	1760	1618
Total Rural	108	67	104	133	111	133	.	112	126	119	53	189

Sources:

1978-84: Estadísticas Educativas, Sexenio 1976-1984, Dir. General de Planificación, Depto. de Estadísticas., MED, Dic. 1988, p. 176, 177, 180, 181.

1986-1990: Preliminary Information from Estadísticas Educativas, Sexenio 1985-1990.

Table 43. Private primary school certified teachers as percent of private primary teachers

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	71%	79%	91%	76%	58%	26%	.	72%	75%	90%	82%	8
Region II	67%	51%	66%	71%	73%	65%	.	69%	72%	77%	86%	89%
Region III	61%	44%	51%	65%	63%	56%	.	69%	62%	67%	77%	76%
Region IV	64%	50%	66%	79%	75%	74%	.	84%	80%	83%	90%	88%
Region V	68%	55%	57%	56%	58%	56%	.	66%	63%	74%	90%	79%
Region VI	67%	48%	63%	57%	58%	50%	.	65%	55%	59%	63%	70%
RAAN	43%	41%	34%	19%	35%	23%	.	27%	30%	39%	52%	43%
RAAS	41%	46%	36%	10%	28%	27%	.	44%	43%	39%	48%	64%
Zona Esp.	0%	NA	NA	0%	NA	0%	.	NA	NA	NA	NA	NA
Total	62%	48%	57%	65%	64%	57%	.	69%	63%	69%	78%	78%
Urban	62%	48%	58%	65%	64%	59%	.	71%	65%	73%	85%	80%
Rural	66%	44%	49%	68%	65%	45%	.	48%	47%	48%	21%	66%

Sources:

Calculated from data above.

Table 44. Teacher supply, primary public

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	835	992	1224	1479	1648	1766	.	2032	2223	2322	2228	2354
Region II	1254	1647	1985	2159	2450	2593	.	2836	3006	2850	2923	2922
Region III	2052	2400	2729	2790	3031	3307	.	2920	3105	3077	3379	3451
Region IV	1824	2134	2428	2624	2709	3053	.	2910	3045	2888	3053	3124
Region V	717	1060	1351	1283	1452	1373	.	1408	1407	1555	1414	1489
Region VI	625	903	941	1199	1339	1476	.	1566	1764	1852	1879	1867
RAAN	255	466	509	187	436	379	.	291	409	465	553	473
RAAS	177	209	222	216	263	161	.	236	271	219	219	239
Zona Esp.	91	143	203	253	178	144	.	188	217	239	184	169
Total	7830	9954	11592	12190	13506	14252	.	14387	15447	15467	15832	16087
Total Urban	5309	5905	6065	6529	7106	7896	.	7382	7805	6835	7662	7878
Total Rural	2521	4049	5527	5661	6400	6356	.	7005	7642	8632	8170	8209

Sources:

1978-84: Estadísticas Educativas, Sexenio 1978-1984, Dir. General de Planificación, Depto. de Estadísticas., MED, Dic. 1988, p. 176, 177, 180, 181.

1986-1990: Preliminary Information from Estadísticas Educativas, Sexenio 1985-1990.

Table 45. Teacher supply, qualified ('graduado') primary public

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	643	685	671	712	813	670	.	710	874	830	1387	1532
Region II	974	1237	1318	1215	1501	1463	.	1462	1601	1379	1971	2131
Region III	1684	1635	1694	1828	2123	2103	.	1703	1739	1618	2104	2118
Region IV	1627	1396	1954	2136	2206	2431	.	1967	2143	1886	2245	2259
Region V	364	503	714	578	615	340	.	396	407	407	572	661
Region VI	406	412	472	578	531	391	.	436	461	392	587	647
RAAN	51	64	122	45	82	73	.	49	46	32	177	138
RAAS	62	64	87	56	87	10	.	45	48	50	58	85
Zona Esp.	49	86	100	166	22	20	.	44	16	16	29	30
Total	5860	6082	7132	7314	7980	7501	.	6812	7335	6610	9130	9601
Total Urban	4468	4354	4473	4689	5115	5279	.	5134	5368	4647	5791	5988
Total Rural	1392	1728	2659	2625	2865	2222	.	1678	1967	1963	3339	3613

Sources:

1978-84: Estadísticas Educativas, Sexenio 1978-1984, Dir. General de Planificación, Depto. de Estadísticas., MED, Dic. 1988, p. 176, 177, 180, 181.

1986-1990: Preliminary Information from Estadísticas Educativas, Sexenio 1985-1990.

Table 46. Percentage of primary teachers who are qualified, public

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	77%	69%	55%	48%	49%	38%	.	35%	39%	36%	62%	65%
Region II	78%	75%	66%	56%	61%	56%	.	52%	53%	48%	67%	73%
Region III	82%	68%	62%	66%	70%	64%	.	58%	56%	53%	62%	61%
Region IV	89%	65%	80%	81%	81%	80%	.	68%	70%	65%	74%	72%
Region V	51%	47%	53%	45%	42%	25%	.	28%	29%	26%	40%	44%
Region VI	65%	46%	50%	48%	40%	26%	.	28%	26%	21%	31%	35%
RAAN	20%	14%	24%	24%	19%	19%	.	17%	11%	7%	32%	29%
RAAS	35%	31%	39%	26%	33%	6%	.	19%	18%	23%	26%	36%
Zona Esp.	54%	60%	49%	66%	12%	14%	.	23%	7%	7%	16%	18%
Total	75%	61%	62%	60%	59%	53%	.	47%	47%	43%	58%	60%
Urban	84%	74%	74%	72%	72%	67%	.	70%	69%	68%	76%	76%
Rural	55%	43%	48%	46%	45%	35%	.	24%	26%	23%	41%	44%

Sources:

Calculated from data above.

Table 47. Summary teacher qualification data

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Total	72%	59%	61%	61%	60%	53%	.	50%	49%	46%	60%	62%
Urban	78%	68%	71%	70%	70%	65%	.	70%	68%	69%	78%	77%
Rural	56%	43%	48%	47%	45%	35%	.	25%	26%	23%	40%	45%
Public	75%	61%	62%	60%	59%	53%	.	47%	47%	43%	58%	61%
Public Urban	84%	74%	74%	72%	72%	67%	.	70%	69%	68%	76%	76%
Public Rural	55%	43%	48%	46%	45%	35%	.	24%	26%	23%	41%	44%
Private	62%	48%	57%	65%	64%	57%	.	59%	63%	69%	78%	78%
Private Urban	62%	48%	58%	65%	64%	59%	.	71%	65%	73%	85%	80%
Private Rural	66%	44%	49%	68%	65%	45%	.	48%	47%	48%	21%	66%

Source:

Calculated from data above.

Table 48. Pupil/teacher ratios by region and year

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	40	36	36	36	34	30	.	28	28	29	29	31
Region II	40	36	38	37	36	34	.	33	32	35	32	35
Region III	34	32	37	38	37	35	.	41	40	42	37	39
Region IV	35	34	34	34	32	30	.	32	32	34	32	34
Region V	40	38	31	34	30	28	.	29	31	30	30	31
Region VI	41	38	39	40	38	36	.	38	36	34	33	35
RAAN	43	31	30	27	29	29	.	34	29	34	30	32
RAAS	34	30	29	32	29	27	.	28	25	34	29	27
Zona Esp.	34	29	25	21	30	26	.	24	25	25	33	35
Total	37	35	35	36	34	32	.	34	33	35	33	34

Source:

Calculated from data above.

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Table 49. Summary pupil/teacher ratio data

	1978	1979-80	1980-81	1982	1983	1984	1985	1986	1987	1988	1989	1990
Total	37	35	35	36	34	32	.	34	33	35	33	34
Urban	33	31	36	36	35	33	.	37	34	41	36	37
Rural	48	41	35	36	33	32	.	30	32	29	29	32
Public	40	36	36	36	34	33	.	32	32	34	33	34
Public Urban	37	33	37	37	36	33	.	35	NA	40	36	37
Public Rural	48	41	35	36	33	32	.	29	NA	29	29	32
Private	25	26	32	35	34	32	.	33	33	42	34	35
Private Urban	24	25	32	35	34	32	.	33	NA	44	34	35
Private Rural	37	35	33	37	33	31	.	34	NA	30	30	32

Source:

Calculated from data above.

Table 50. Classroom situation

	Current (1991) classroom repair needs			1989 classroom conditions		
	Priority I	Priority II	Priority III	Good	Medium	Bad
Region I	101	67	16	823	335	84
Region II	84	47	77	1129	393	138
Region III	176	166	85	1352	1002	78
Region IV	91	53	63	1590	404	61
Region V	54	48	40	796	267	26
Region VI	116	28	9	689	206	28
RAAN	NA	NA	NA	116	147	44
RAAS	NA	NA	NA	210	9	2
Zona Esp.	NA	NA	NA	41	71	0
Total	622	409	290	6746	2834	461
Percent	47%	31%	22%	67%	28%	5%

Source:

MED, Division de Ingenieria y Arquitectura Escolar.

Notes:

Priority I: Practically unusable. Requires virtual or actual reconstruction.

Priority II: Extensive disrepair, but can be repaired.

Priority III: Requires maintenance.

Note that the first table are those that require action, whereas the second table lists the universe as of 1989.

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Table 51. Classroom construction history - urban

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Region I	NA	0	59	56	179	34	15	3	10	0	0	0
Region II	NA	1	32	126	216	40	39	0	0	0	54	0
Region III	NA	39	50	112	185	232	40	5	3	0	0	0
Region IV	NA	0	38	100	382	132	55	20	0	0	0	0
Region V	NA	0	18	16	154	38	30	3	4	4	0	0
Region VI	NA	3	53	62	187	96	34	0	10	10	0	1
RAAN	NA	0	6	1	16	0	0	1	0	0	0	0
RAAS	NA	0	12	23	0	30	0	0	0	0	0	170
Zona Esp.	NA	0	0	16	0	23	16	12	2	0	6	0
Total	NA	43	268	512	1319	625	229	44	29	14	60	171

Source:

Division de Ingenieria y Arquitectura Escolar, MED.

Note:

These data do not refer only to primary schools.

Table 52. Classroom construction history - rural

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Region I	NA	9	33	148	232	57	2	9	4	0	0	0
Region II	NA	19	48	94	288	33	49	8	4	0	0	0
Region III	NA	5	16	64	82	84	15	0	0	0	4	0
Region IV	NA	15	90	132	132	112	18	18	22	22	0	0
Region V	NA	10	121	188	368	42	0	0	0	0	0	0
Region VI	NA	6	20	53	36	14	15	13	0	0	29	0
RAAN	NA	5	2	2	0	0	0	0	0	0	0	0
RAAS	NA	0	0	0	0	8	0	0	0	0	0	0
Zona Especial	NA	0	0	0	0	3	0	24	37	6	7	0
Total	NA	69	330	681	1138	353	99	72	67	28	40	9

Source:

Division de Ingenieria y Arquitectura Escolar, MED.

Table 53. Classroom construction history - total

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Region I	NA	9	92	204	411	91	17	12	14	0	0
Region II	NA	20	80	220	504	73	88	8	4	0	54
Region III	NA	44	66	176	267	316	55	5	3	0	4
Region IV	NA	15	128	232	514	244	73	38	22	22	0
Region V	NA	10	139	204	522	80	30	3	4	4	0
Region VI	NA	9	73	115	223	110	49	13	10	10	29
RAAN	NA	5	8	3	16	0	0	1	0	0	0
RAAS	NA	0	12	23	0	38	0	0	0	0	0
Zona Especial	NA	0	0	16	0	26	16	36	39	6	13
Total	NA	598	1193	2457	976	328	116	96	42	100	180
Total over 1979-89		5908									
% built each year		10%	20%	42%	17%	6%	2%	2%	1%	2%	3%

Source:

Calculated from data above.

Table 54. Classroom construction history - % rural

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Region I	NA	13%	37%	45%	87%	79%	40%	47%	NA	NA	NA
Region II	NA	37%	28%	30%	88%	46%	100%	100%	NA	0%	NA
Region III	NA	9%	13%	26%	26%	68%	75%	0%	NA	ERR	NA
Region IV	NA	28%	47%	26%	50%	67%	47%	100%	100%	NA	NA
Region V	NA	36%	88%	55%	91%	58%	0%	0%	0%	NA	NA
Region VI	NA	10%	24%	22%	27%	29%	100%	57%	0%	ERR	97%
RAAN	NA	45%	67%	11%	NA	NA	0%	NA	NA	NA	NA
RAAS	NA	0%	0%	NA	0%	NA	NA	NA	NA	NA	0%
Zona Especial	NA	NA	0%	NA	0%	16%	0%	92%	100%	50%	NA
Total	NA	20%	39%	34%	65%	61%	69%	71%	83%	32%	19%

Source:

Calculated from tables above.

Table 55. Some summary data regarding classroom construction

Funded with communities, donations, international aid	5%
Funded with World Bank loan	18%
Funded with MED funding	77%

Table 56. Classroom repair activities

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Region I	46	11	21	10
Region II	22	24	33	0
Region III	123	95	92	5
Region IV	40	17	47	11
Region V	31	33	50	7
Region VI	18	23	33	13
RAAN	0	10	12	0
RAAS	0	8		0
Zona Especial	0	10	15	0
Total	280	231	352	46

Source:

Division de Ingenieria y Arquitectura Escolar, MED.

Table 57. Numbers of primary classrooms - public, low estimate

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Region I	641	.	.	.	.	.	1030	.	.	.	.	1242
Region II	1302	.	.	.	.	.	1872	.	.	.	.	1660
Region III	1698	.	.	.	.	.	1986	.	.	.	.	2432
Region IV	1537	.	.	.	.	.	2077	.	.	.	.	2055
Region V	436	.	.	.	.	.	873	.	.	.	.	1089
Region VI	576	.	.	.	.	.	944	.	.	.	.	923
RAAN	443	.	.	.	.	.	535	.	.	.	.	307
RAAS	279	.	.	.	.	.	308	.	.	.	.	221
Zona Especial	96	.	.	.	.	.	136	.	.	.	.	112
Total	6998	.	.	.	.	.	9761	.	12349	13785	15240	10041 or 12321

Sources:

1978 and 1984, Estadísticas Educativas, Sexenio 1978-1984, p. 238.

1986 and 1987, Direct communication from Jose Zelaya, from photocopied planning documents.

1988, Division de Ingeniería y Arquitectura Escolar.

1989, Division de Ingeniería y Arquitectura Escolar.

Note: there was a hurricane (Joan) in 1988.

Table 58. Numbers of primary classrooms - public, high

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Region I	641	650	742	946	1357	1446	1465	1477	1491	1491	1491	152
Region II	1302	1322	1402	1622	2126	2199	2287	2295	2299	2299	2353	2037
Region III	1688	1732	1798	1974	2241	2557	2612	2617	2620	2620	2624	2984
Region IV	1537	1552	1680	1912	2426	2670	2743	2781	2803	2825	2825	2522
Region V	436	446	585	789	1311	1391	1421	1424	1428	1432	1432	1336
Region VI	576	585	658	773	996	1106	1155	1168	1178	1188	1217	1133
RAAN	443	448	456	459	475	475	475	476	476	476	476	377
RAAS	279	279	291	314	314	352	352	352	352	352	352	271
Zona Especial	96	96	96	112	112	138	154	190	229	235	248	137
Total	6998	7110	7708	8901	11358	12336	12664	12780	12876	12918	13018	12321

Sources:

1978: Same as low estimate.

1979-1988: Adding classrooms constructed to last year's stock.

1989: MED's high estimate of total, distributed by regional distribution implicit in MED's low estimate.

Table 59. Numbers of students per classroom - public, high estimate

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Region I	54	.	.	.	.	.	50	.	.	.	.	52
Region II	41	.	.	.	.	.	48	.	.	.	.	57
Region III	47	.	.	.	.	.	60	.	.	.	.	52
Region IV	45	.	.	.	.	.	43	.	.	.	.	47
Region V	69	.	.	.	.	.	45	.	.	.	.	39
Region VI	49	.	.	.	.	.	57	.	.	.	.	60
RAAN	27	.	.	.	.	.	20	.	.	.	.	54
RAAS	24	.	.	.	.	.	14	.	.	.	.	26
Zona Especial	33	.	.	.	.	.	28	.	.	.	.	55
Total	45	.	.	.	.	.	47	.	39	.	34	51

Source:
Calculated from data above

Table 60. Numbers of students per classroom - public, low estimate

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Region I	54	56	60	56	41	36	35	.	.	.	45	42
Region II	41	47	56	51	42	41	39	.	.	.	41	46
Region III	47	48	57	55	51	47	46	.	.	.	48	43
Region IV	45	50	50	47	36	34	33	.	.	.	35	39
Region V	69	91	71	55	34	28	28	.	.	.	32	32
Region VI	49	60	57	63	51	49	47	.	.	.	51	55
RAAN	27	34	34	11	26	23	23	.	.	.	31	44
RAAS	24	23	21	19	21	13	13	.	.	.	21	21
Zona Especial	33	43	52	47	47	28	25	.	.	.	24	45
Total	45	51	54	50	41	38	37	.	38	.	40	42

Source:
Calculated from data above

Table 61. Primary school educational materials distribution
(Selected years)

	1986	1987	1990
Totals			
Notebooks	5716633	1225301	2808531
Pencils	4939364	6956548	2653693
Pens	NA	NA	178713
Textbooks	1975614	3578179	2596475
Per Student			
Notebooks	11.7	2.4	5.1
Pencils	10.1	13.5	4.8
Pens			0.3
Textbooks	4.1	6.9	4.7

Source:
All years, Plan Evaluations

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APPENDIX V-1

MED Positons by Gender

	TOTAL	REGIONAL ADMIN. SERVICES	SPECIAL EDUCATION	PRE- SCHOOL EDUCATION	PRIMARY SCHOOL	SECONDARY SCHOOL	TEACHING FORMATION
FIRST REGION	3966	259	44	161	2859	503	140
MANAGEMENT POSITIONS	249	57	2	6	130	45	9
MEN	80	26	0	0	36	16	2
WOMEN	169	31	2	6	94	29	7
TECHNICAL POSITIONS	171	126	1	0	19	17	8
MEN	87	74	0	0	7	5	1
WOMEN	84	52	1	0	12	12	7
TEACHING POSITIONS	3296	0	37	150	2646	377	86
MEN	370	0	0	0	238	120	12
WOMEN	2926	0	37	150	2408	257	74
LOGISTICAL POSITIONS	250	76	4	5	64	64	37
MEN	92	43	2	1	18	19	9
WOMEN	158	33	2	4	46	45	28
SECOND REGION	5360	307	79	221	3488	1100	165
MANAGEMENT POSITIONS	447	64	7	7	298	62	9
MEN	75	26	0	0	25	22	2
WOMEN	372	38	7	7	273	40	7
TECHNICAL POSITIONS	539	174	4	0	4	346	7
MEN	189	76	0	0	1	110	2
WOMEN	350	102	4	0	3	236	5
TEACHING POSITIONS	4026	0	55	208	3094	582	87
MEN	448	0	0	0	278	151	19
WOMEN	3578	0	55	208	2816	431	68
LOGISTICAL POSITIONS	348	65	13	6	92	110	67
MEN	134	20	7	3	7	81	16
WOMEN	214	45	6	3	85	29	46
THIRD REGION	7781	351	98	494	4640	2052	146
MANAGEMENT POSITIONS	616	50	11	17	390	142	6
MEN	182	20	0	0	109	51	2
WOMEN	434	30	11	17	281	91	4
TECHNICAL POSITIONS	319	235	0	0	17	61	6
MEN	120	108	0	0	2	8	2
WOMEN	199	127	0	0	15	53	4
TEACHING POSITIONS	6097	0	67	449	3951	1525	105
MEN	1616	0	0	0	1106	473	37
WOMEN	4481	0	67	449	2845	1052	68
LOGISTICAL POSITIONS	749	66	20	28	282	324	29
MEN	251	24	4	7	126	84	6
WOMEN	498	42	16	21	156	240	23

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	TOTAL	REGIONAL ADMIN. SERVICES	SPECIAL EDUCATION	PRE- SCHOOL EDUCATION	PRIMARY SCHOOL	SECONDARY SCHOOL	TEACHING FORMATION
FOURTH REGION	5937	334	76	276	3855	1208	88
MANAGEMENT POSITIONS	442	70	7	7	285	67	6
MEN	183	22	0	0	134	23	4
WOMEN	259	48	7	7	151	44	2
TECHNICAL POSITIONS	213	186	5	0	5	13	4
MEN	92	86	0	0	2	3	1
WOMEN	121	100	5	0	3	10	3
TEACHING POSITIONS	4776	0	57	259	3428	986	46
MEN	592	0	0	0	291	266	35
WOMEN	4184	0	57	259	3137	720	11
LOGISTICAL POSITIONS	406	78	7	10	137	142	32
MEN	75	34	2	1	13	18	7
WOMEN	331	44	5	9	124	124	25
FIFTH REGION	2726	191	18	119	1965	395	39
MANAGEMENT POSITIONS	235	51	3	3	132	41	5
MEN	75	28	0	0	35	11	1
WOMEN	160	23	3	3	97	30	4
TECHNICAL POSITIONS	102	91	1	0	3	1	6
MEN	46	42	0	0	1	1	4
WOMEN	54	49	1	0	2	0	2
TEACHING POSITIONS	2205	0	12	111	1777	298	7
MEN	280	0	0	0	168	107	5
WOMEN	1925	0	12	111	1609	191	2
LOGISTICAL POSITIONS	184	49	2	4	53	55	21
MEN	55	24	1	0	5	26	5
WOMEN	129	25	1	4	48	35	16
SIXTH REGION	3069	249	55	129	2216	334	86
MANAGEMENT POSITIONS	180	66	4	5	82	18	5
MEN	75	37	0	0	28	6	4
WOMEN	105	29	4	5	54	12	1
TECHNICAL POSITIONS	140	135	1	0	2	0	2
MEN	74	72	0	0	1	0	1
WOMEN	66	63	1	0	1	0	1
TEACHING POSITIONS	2518	0	39	122	2103	283	71
MEN	359	0	0	0	211	96	52
WOMEN	2259	0	39	122	1892	187	19
LOGISTICAL POSITIONS	131	48	11	2	29	33	8
MEN	52	21	3	0	13	13	2
WOMEN	79	27	8	2	16	20	6

	TOTAL	REGIONAL ADMIN. SERVICES	SPECIAL EDUCATION	PRE- SCHOOL EDUCATION	PRIMARY SCHOOL	SECONDARY SCHOOL	TEACHING FORMATION
NORTH ATLANTIC ZONE	1080	107	6	77	792	77	21
MANAGEMENT POSITIONS	94	24	1	3	57	7	2
MEN	18	11	0	0	6	0	1
WOMEN	76	13	1	3	51	7	1
TECHNICAL POSITIONS	53	53	0	0	0	0	0
MEN	21	21	0	0	0	0	0
WOMEN	32	32	0	0	0	0	0
TEACHING POSITIONS	873	0	5	73	726	58	11
MEN	247	0	0	0	203	36	8
WOMEN	626	0	5	73	523	22	3
LOGISTICAL POSITIONS	60	30	0	1	9	12	8
MEN	23	13	0	0	4	5	1
WOMEN	37	17	0	1	5	7	7
SOUTH ATLANTIC ZONE	358	73	0	10	193	55	27
MANAGEMENT POSITIONS	57	22	0	0	29	4	2
MEN	21	9	0	0	9	2	1
WOMEN	36	13	0	0	20	2	1
TECHNICAL POSITIONS	43	32	0	0	11	0	0
MEN	20	14	0	0	6	0	0
WOMEN	23	18	0	0	5	0	0
TEACHING POSITIONS	220	0	0	10	145	45	19
MEN	67	0	0	0	46	9	12
WOMEN	153	0	0	10	99	37	7
LOGISTICAL POSITIONS	38	19	0	0	8	5	6
MEN	16	9	0	0	3	2	2
WOMEN	22	10	0	0	5	3	4
SPECIAL ZONE (RIO SAN JUAN)	203	66	1	44	59	17	16
MANAGEMENT POSITIONS	28	19	1	0	5	1	2
MEN	10	8	0	0	1	0	1
WOMEN	18	11	1	0	4	1	1
TECHNICAL POSITIONS	25	24	0	0	1	0	0
MEN	8	7	0	0	1	0	0
WOMEN	17	17	0	0	0	0	0
TEACHING POSITIONS	120	0	0	43	52	14	11
MEN	41	0	0	0	32	2	7
WOMEN	79	0	0	43	20	12	4
LOGISTICAL POSITIONS	30	23	0	1	1	2	3
MEN	18	13	0	0	1	2	2
WOMEN	12	10	0	1	0	0	1

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APPENDIX VII-1

Analysis of MF owned businesses

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INTRODUCTION

PURPOSE

The purpose of this study is to analyze the businesses that the Ministry of Education (MED) owns and report the status of the different organizations. During the study, it was found that three of the five businesses that belonged to the MED were brought together to form one company called "Empresa Pro-Desarrollo Educativo S.A. (EMPRODESA), and now are part of the National Technical Institute (INATEC), which is headed by the former Minister of Education Ing. Sofonia Cisneros. Another of the five businesses, which disappeared with the new government was a Marketing Center which used to sell to the public all kinds of products that the MED had in inventory in its warehouse, including donations that the MED received. Therefore, the MED has been left only with the Training Center "Blanca Arauz" situated in the city of San Marcos.

SCOPE OF WORK

This report presents the background of each of the centers, the findings during the study, and the conclusion of the report. The findings of the study will be divided among four different categories: the description of the businesses, the administrative structure of the centers, the profitability and accountability of the centers, and the long-term plans that the MED has for each of the businesses.

BACKGROUND

All of these businesses, with the exception of the Training Center "Blanca Arauz", were created with the objective of supporting the MED with the profits generated by these centers. During the Sandinista administration, these businesses were supervised by the "Division de Coordinacion de Empresas" under the General Division of Administration of the MED (Appendix A). The businesses back then were three production centers, one marketing center, and one training center.

The production centers were the following: 1. "Fabrica de Muebles Escolares" (FAME), whose main objective was to produce student desks. 2. "Empresa de Pre-fabricados de Nicaragua" (EPRENIC), whose main objective was to produce "already-made" panels for the construction and maintenance of schools. 3. "Imprenta 'Tonio Pflaum'", whose main objective was to print text books and any kind of printed material to support the MED. These three centers now constitute the "Empresa Pro-Desarrollo Educativo S.A." (EMPRODESA), which is now part of INATEC (Appendices B & C).

The marketing center, which was a retailer of all kinds of products including donated material, no longer exists. It disappeared with the change of government.

The Training Center "Blanca Arauz" used to be a College of Education for women in the Somoza Administration, and since the revolution in 1979, the building is used to conduct seminars. Its revenues are generated by the services it provides to the seminar participants which include food, lodging, and refreshments.

EMPRODESA

With the idea of the MED under the new government to get rid of the "Division de Coordinacion de Empresas", EMPRODESA was formed to coordinate the three productive centers with Mr. Manuel Palma acting as manager. The name for the construction center changed from EPRENIC to "Servicios de Construccion" (SERCO), and FAME changed to "Centro Industrial de la Madera" (CIMA); the name for the printing center was unchanged.

Imprenta "Tonio Pflaum"

As mentioned, these centers were formed with the idea to generate funds for the MED, since the budget for education was too low. Specifically, the printing center was formed in 1988 with a group of machines that the MED owned, including an old machine that AID had donated back in the Somoza administration. Then, it received a donation from the German government to help the center get started, and since the beginning Mr. Salvador Cruz has been working as head of the center as General Director. Mr. Cruz had established a close relationship with the Germans, and after the death of a German doctor granting his services in Nicaragua the MED and Germans agreed to name the center "Tonio Pflaum" in memory of the doctor.

SERCO

"Empresa de Pre-fabricados Nicaraguenses" (EPRENIC), which later became "Servicios de Construccion" (SERCO) was originally created with the idea that it was going to produce "already-made" panels with a technique and material that a Hungarian company named ESZI had sold to the MED. This was late in 1989, and the material and equipment which was worth 700,000 dollars was intended to be used for the construction of fifty schools which ESZI was going to help finance. Soon with the elections in February 1990 and the change of administration the plans did not take place and the hungarians did not comply with their agreement.

CIMA

With the change of government, and change within the internal

structure of the MED, FAME became "Centro Industrial de la Madera" (CIMA). This center started in 1980 as a small wood shop that belonged to the MED. Their equipment was brought from different sectors of the MED, including schools that use to have wood shop courses and were later discontinued. According to the Director of the center, the peak years of the shop was from 1980 to 1983 when CARE was financing the purchase of raw materials. Then, there was a period of about five years of slow development and very few sales, until 1988-1989 when "Division de Coordinacion de Empresas" was formed. Then, 1989 was another "boom" year for CIMA, until the change of government last year that brought restructuring to the centers. Therefore, this restructuring has caused more disorganization and slower development, as is normal in any time of change.

TRAINING CENTER "BLANCA ARAUZ"

Since the revolution in 1979, this center, which use to be a College of Education with a capacity to hold 500 students sleeping at the center, has been used mainly to hold different types of seminars. It has also started to rent its class rooms to private centers that offer courses in typing, accounting, and business administration on Saturdays. Because the demand for the courses is greater than the capability of the private school, the center started offering similar courses. In this manner, the center has two sources of income: the fees obtained from room and board during seminars, and the tuition and fees from the Saturday students. However, this two divisions are independent of one another. The utilities generated are used within their same division.

MARKETING CENTER

This center started operating at the end of 1988 when "Division de Coordinacion de Empresas" (Division of Business Coordination) was created. Before, it was the MED's warehouse. However, with the purpose of inventory rotation the MED decided to sell its inventory to the MED's employees, and then to the public. However, as mentioned above this center no longer exists.

FINDINGS

The findings among the productive centers that form EMPRODESA are very similar. For this reason, this section of the report will be divided between EMPRODESA and the Training Center.

DESCRIPTION OF THE BUSINESSES

EMPRODESA

"Empresa Pro-Desarrollo Educativo S.A." is a productive center with an economic autonomy under the direction of the MED; the

transfer of EMPRODESA to INATEC is being negotiated presently. Furthermore, it is not clear how the original assignment of 98% of the shares to the Ministry of Education, and 2% to the General Manager and the directors of each center is going to be divided with INATEC. EMPRODESA is responsible of selling its printing services, constructing schools, and producing school furniture or any other type of furniture.

SERCO is now concentrating its services to the construction industry, but its activities have been stopped because of the lack of demand due to the economic situation of the country. When SERCO was created, roughly two years ago, the MED bought 700,000 dollars worth of construction materials to ESZI (a hungarian company who was going to finance the construction of fifty schools), and still has about 600,000 dollars of the material in inventory. SERCO has used part of its inventory in a couple of projects for the MED, and another part in the construction of small houses to help the center cover its costs of administration. For example, SERCO started building seven cabins during February 1990 at the beach of "Huehueté" to provide recreation for the MED's employees. However, these cabins were left 70% complete due to the lack of funds and the change of government, and given to ANDEN (a teachers organization characterized for its Sandinista participation) by the former administration after ANDEN claimed that it was built for them. Another example of a small project is the building of three classrooms during December-January 1990 at a cost of 24,000 dollars at "Jonathan Gonzales" (a poor residential area near Plaza Espana). The number of employees back then was nine full time positions in the administrative division and twenty-two contractors in the production division, totalling thirty-one employees a year ago.

However, the MED stopped paying their costs of production and administration as of December 1990. So, SERCO's personnel has dropped to a minimum to handle its administrative functions with seven employees, three of them security guards. The Sales and Production division have no personnel (Appendix D).

Now that EMPRODESA is being transferred to INATEC all of its centers are starting to diversify production from an educational to a general type of production. This changes its clientele also, from the MED to the general public.

CIMA for example, which used to produce student desks and school furniture for the MED is now producing domestic, educational, and commercial furniture to serve the general public. It has a personnel list of forty-four employees, twelve in the administrative and marketing division and thirty-two in the production division (Appendix E). The name of the center's Director is Ramon Aleman Conrado.

The printshop "Tonio Pflaum" has created its own clientele for the past couple of years outside the education sector. The type of jobs it does is posters for the Brewery Victoria, calendars for TANIC, ticket stubs for Aeronica, and many other jobs like

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pamphlets and books for the MED. Presently, it has forty-five employees, but a year ago it used to have seventy-five, all divided in three divisions: Administration, Sales, Production (Appendix F). Salvador Cruz says that only 60% of the center's capacity is presently being used, and he added that using all of its resources and at full capacity the center could print 538,000 books of 150 pages per year. When talking about the distribution of materials two problems were encountered: first the need of more space for its warehouse, and second, the purchase of raw materials (paper) is done through importers here in the country. Avoiding this intermediary the costs of raw materials could be dropped significantly, and therefore, making its prices more competitive.

Training Center "Blanca Arauz"

This is a training center located in the city of San Marcos. As mentioned before it used to be a College of Education for women during the Somoza administration. It has a sleeping capacity of five hundred students at the center. Even though it has hosted a group from the MED of four hundred and fifty teachers for a week, most of its average seminars are for a couple of days to a group of about fifty persons.

Presently, the MED has given the center an administrative autonomy. The MED assigned the position of Administrative Director to Roger Morales. He has an independent position from the MED to charge whatever he calculates his costs to be, but then he is asked to report his activities periodically. A team of auditors from the MED visits him periodically to investigate his investment in the center.

Roger Morales has two divisions under his position. There is the Administration Division and the Training Division. The later one is a relatively new division which offers courses of Business Administration and Accounting on Saturdays. The idea was acquired when Mr. Morales saw that his client who offers this courses on Saturdays also needed more teachers and space because student registration kept increasing. As a result, the Training Division is made up of ten persons, one secretary and nine instructors. On the other hand, the Administration Division has eighteen employees including the Director. It is important to note that these two divisions are independent of one another. The revenues that the center generates during seminars go to the Administration Division, and the revenues from the business courses on Saturdays go to the Training Division. Each one uses its revenues to cover its costs and profits for maintenance and growth of each division.

ADMINISTRATIVE STRUCTURE OF THE BUSINESSES

The administrative structure of the businesses is very similar with the difference that EMPRODESA is attached to INATEC and the Center "Blanca Arauz" to the MED.

EMPRODESA

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EMPRODESA is under the direction of INATEC. It has a board of directors who rule its regulations, constitution, etc. The position of President of the Board of Directors was assigned to be whoever was the Minister of Education. With the new government, Ing. Sofonias Cisneros was appointed to be the Minister of Education. However, January 10, 1991 there was a restructuring in the government and Ing. Cisneros was reassigned to be the Director of INATEC, leaving Dr. Humberto Belli as Minister of Education. Dr. Belli apparently did not want the centers to stay in the MED, so, the centers were transferred to INATEC. The new board of directors has not been defined yet, as well as the percentage of shares that the MED and INATEC will own. (See appendices B through F for more information).

Training Center "Blanca Arauz"

This center is under the direction of the General Division of Administration headed by Ms. Agnes Pastora. However, the person that keeps the information with the director of the center is Mr. Efrain Sanchez who is Ms. Pastora's assistant. As mentioned above, the center has its administrative independence from the MED. The flow of information between the MED and the center occurs periodically when the auditors go to San Marcos to investigate the center's activities.

PROFITABILITY AND ACCOUNTABILITY

As it has been mentioned, all of the centers depend on either INATEC or the MED for major decisions and accountability, but neither of the centers generate any profits for the institutions as it was done under the Sandinista administration. Since January 1991, all profits or losses are covered by the centers. The MED under the Sandinistas created these centers with the idea to generate profits and help the MED increase its budget. The directors of the centers state that the MED used to cover all costs of administration and production, but all revenues would go directly to the MED. Presently, the centers have become administratively independent.

EMPRODESA

The general manager of this company is Mr. Manuel Palma, who was general manager when the centers were under the MED's Division of Business Coordination. Mr. Palma is responsible of planning, coordinating, directing, and controlling the activities of the centers. The printshop "Tonic Pflaum" is the best established of the three since it has managed to create its own clientele within the private sector. For instance, Mr. Salvador Cruz, director of the printshop, said that in some cases he has had to cover the payroll for the two other centers so they don't go out of business. However, he argues that as soon as SERCO gets a big project, it will be enough so that SERCO can pay him back "and even get a small loan (for the printshop) to buy more equipment."

"Tonio Pflaum" is probably the most prosperous of the three, but due to different circumstances it has not been able to grow. These different circumstances include the profits that went to the MED during the Sandinista administration, the "loans" given to the other centers when they encounter hard times, and the lack of total independence due to the organizational and administrative structure that ties itself to the other centers.

Even though SERCO is the one with the production halted at this moment, it is the one with the greatest potential to grow. Besides, it has an enormous inventory, estimated to be worth at least 600,000 dollars, which is of great interest to the MED. Presently, the center is looking for any kind of contract to pay at least for the salary of the seven administrative employees.

"CIMA" is expanding its market by increasing its product variety. It has begun to produce all kinds of wooden furniture, from student desks to dining tables. According to Mr. Aleman, the center's director, one of the reasons it is doing this is because the MED is not buying furniture from them anymore. The day I visited the center, they were assembling and finishing a contract of student desks for "El Teresiano", a religious and private school for girls in Managua. This center is back in business after a year of hard times.

Training Center "Blanca Arauz"

This center use to generate enough revenues to come out break even with its administrative costs, but not enough to cover maintenance cost for the building, so, no maintenance is done since the MED does not subsidize it anymore. During the month of February, 1991, the MED conducted the Teacher Training Seminars ("Talleres de Capacitacion") at this center. The MED took to San Marcos more or less three hundred teachers a week from all the regions for four weeks. At \$10.50 dollars per person per day, this brought about \$40,000 dollars in revenues to the center. It is hoped that this will help reactivate the center and start giving maintenance to the building because it looks like for the past ten years no maintenance has been given to the center.

LONG-TERM PLANS FOR THE BUSINESSES

Even though the centers are being administered by two different institutions, the long-term goals are very similar. Both INATEC and the MED are planning to make technical institutes out of these centers, besides being productive centers.

EMPRODESA

In the case of these three centers, Ing. Sofonias Cisneros told me that he wanted to bring technical students to these centers and let them work as assistants while they learn. This would bring a lot of inexpensive help to the centers since no payment is given to the students, and at the same time the centers will contribute

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to the technical formation of the students.

Training Center "Blanca Arauz"

Even though this center has served already for training to different people, the new idea in mind is somewhat different. In the past, the type of training has been concentrated to the professional sector in the type of seminars, and the center was not involved in the training except for its services. Now, besides having its services available for seminars, the MED wants to help promote the "Saturday Courses" it already started. At this time, some Business Administration and Accounting courses are offered, but they want to expand courses to include typing. They have thought about offering computer courses also, but do not see it possible in the near future because of the greater investment in equipment and qualified personnel to teach the courses.

CONCLUSION

In conclusion, uncertainty within the MED still exists because the transfer of the centers to INATEC has brought many questions with it. As mentioned, the legal status of EMPRODESA is not clear and neither is the relation it will have with the MED. It is known that the three centers will be transferred to INATEC, and the "Blanca Arauz" Center will be kept by the MED. Additionally, it has already been established that EMPRODESA will be transferred without affecting INATEC's budget. The inventory outstanding with the MED of 600,000 dollars will have to be paid by EMPRODESA as if they were buying the materials from the MED as projects come up. Additionally, a percentage, which has not been established, of profits generated by EMPRODESA will be for the education sector (MED or INATEC).

As with the majority of the businesses and centers in Nicaragua, especially the state owned ones, uncertainty is common. However, as mentioned above, this is a normal situation in a time of change. 1990 has been a very difficult year for the government, and it has not been different for these small businesses. SERCO and CIMA are in a stage of survival, generating enough income to cover their costs. At times, when they incur losses, their losses are covered by the printshop "Tonio Pflaum". On the other hand, the center "Blanca Arauz" is beginning to reactivate itself.

Moreover, there is a sense of not belonging within these centers, especially the three that form EMPRODESA, since they have been relocated to another institution. Moreover, they were threatened because at the time of deciding the future of the centers, it was mentioned that the centers were going to disappear and the equipment was going to be auctioned, others mentioned transferring the centers to CORNAP (Corporacion Nicaraguense de Areas y Propiedad del Pueblo) and privatizing them. Again, all these factors create an environment of uncertainty, and there will be slow progress if the centers do not receive support from the institutions it has ties with.

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Finally, the long-term goals for EMPRODESA and the center "Blanca Arauz" are to make them training centers as well as productive centers. The profits generated from their services will be reinvested on their own activities, and not given to the MED as was customary under the past administration. This will help in the growth of each of the centers.

APPENDIX VIII-1

Normal School Program

Teacher Training
CURRICULUM PROGRAM OF PRE AND IN-SERVICE TEACHER TRAINING

Table 1 - Curriculum Plan for the Pre-Service Training of Primary School Teachers in the Regular Five Year Program, 1991.

Subject	Hours per Year					Total
	1st	2nd	3rd	4th	5th	
1.Spanish	160	160	160	192	80	752
2.Mathematics	160	160	160	192	80	752
3.Chemistry	-	64	144	80	-	288
4.Physics	-	128	128	128	-	384
5.Natural Sciences	128	92	92	-	-	320
6.Biology	-	-	-	80	80	160
7.Physical Geography	80	-	-	-	-	80
8.Geography of Americas	80	-	-	-	-	80
9.Geography of Nicaragua	-	80	-	-	-	80
10.Ancient, Medio. History	80	-	-	-	-	80
11.Contemporary History	80	-	-	-	-	80
12.History of America	-	80	-	-	-	80
13.History of Nicaragua	-	96	-	-	-	96
14.Economy & Society	-	-	64	-	-	64
15.Civic Training	64	64	32	-	-	160
16.Philosophy	-	-	-	-	64	64
17.Methodology-Calligraphy	64	-	-	-	-	64
18.Methodology-Orthography	64	64	-	-	-	128
19.Methods, Music & Dance	64	-	-	-	-	64
20.Methods Drawing, Paint.	64	-	-	-	-	64
21.Methods Phy.Ed., Sports	64	64	-	-	64	196
22.Methods Manual labor	64	64	-	-	-	128
23.Methods School Garden	64	64	-	-	-	128
24.General Pedagogy	-	-	96	-	-	96
25.General didactics	-	-	128	-	-	128
26.History of Education	-	-	-	80	-	80
27.General Psychology	-	-	80	-	-	80
28.Pedagogic psychology	-	-	128	-	-	128
29.Methods Pre-School	-	-	-	48	-	48
30.Techniques Multi-grade	-	-	-	-	48	48
31.Methods Teach.Spanish	-	-	-	64	48	112
32.Methods Teach.math	-	-	-	80	32	112
33.Methods Teach. Nat.Sci.	-	-	-	48	64	112
34.Methods Teach.Soc.Sci.	-	-	-	48	64	112
35.Methods Teach.Adult Ed.	-	-	-	48	64	112
36.Stats & Educ.Evaluation	-	-	-	96	-	96
37.Organ, Admin.Education	-	-	-	80	-	80
38.Tech.Educ.Research	-	-	-	64	-	64
39.School & Community	-	96	-	-	-	96
40.School Hygiene	-	-	64	-	-	64
41.Practice Teaching	-	-	-	-	640	640
42.Year of Social Service	-	-	-	-	-	-
Totals	1280	1280	1280	1280	1280	6400

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Curriculum Plan for the Pre-Service Training of
Primary School Teachers in the Regular Two year Program,
1991.

Subject	Hours per Year		
	4th	5th	Total
1.Spanish	192	80	272
2.Mathematics	192	80	272
3.Chemistry	144	-	144
4.Physics	-	190	190
5.Biology	-	158	158
6.Methodology-Calligraphy	24	-	24
7.Methodology-Orthography	24	-	24
8.Methods,Music & Dance	32	-	32
9.Methods Drawing,Painting	32	-	32
10.Methods Phy.Ed.,Sports	32	-	32
11.Methods Manual Labor	24	-	24
12.Methods School Garden	32	-	32
13.Economy & Society	56	-	56
14.Civic Training	-	44	44
15.Philosophy	-	44	44
16.General Pedagogy	64	-	64
17.General Didactics	80	16	96
18.History of Education	-	33	33
19.General Psychology	56	-	56
20.Pedagogic psychology	80	16	96
21.Methods Pre-School	-	22	22
22.Techniques Multi-grade	-	33	33
23.Methods Teach.Spanish	-	40	40
24.Methods Teach.mathematics	-	40	40
25.Methods Teach. Nat.Science	-	40	40
26.Methods Teach.Soc.Science	-	40	40
27.Methods Teach.Adult Educ.	-	11	11
28.Statis. & Educ.Evaluation	56	-	56
29.Organ,Admin.Education	56	-	56
30.Tech.Educ.Research	40	-	40
31.School & Community	32	-	32
32.School Hygiene	32	-	32
33.Practice Teaching	-	233	233
34.Year of Social Service	-	-	-
Totals	1,280	1,280	2,560

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Curriculum Plan for the Pre-Service Training of
Primary School Teachers in the Regular one year Program,
1991.

Subject	Hours per Year	
	5th	Total
1. Civics	33	33
2. Methodology-Calligraphy	24	24
3. Methodology-Orthography	24	24
4. Methods, Music & Dance	24	24
5. Methods Drawing, Painting	24	24
6. Methods Phy. Ed., Sports	24	24
7. Methods Manual Labor	22	22
8. Methods School Garden	22	22
9. General Pedagogy	64	64
10. General Didactics	80	80
11. History of Education	33	33
12. General Psychology	56	56
13. Pedagogic psychology	80	80
14. Methods Pre-School	22	22
15. Techniques Multi-grade	33	33
16. Methods Teach. Spanish	40	40
17. Methods Teach. mathematics	40	40
18. Methods Teach. Nat. Science	40	40
19. Methods Teach. Soc. Science	40	40
20. Methods Teach. Adult Educ.	22	22
21. Statis. & Educ. Evaluation	56	56
22. Organ, Admin. Education	44	44
23. Tech. Educ. Research	33	33
24. School & Community	22	22
25. School Hygiene	24	24
26. Practice Teaching	354	354
27. Year of Social Service		
Totals	1,280	1,280

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Teacher Training - NEEDS OF THE NORMAL SCHOOLS

Note - Normal School directors were asked to give a list of their needs in order to improve the quality of education. Eight of the directors responded. Most indicated physical infrastructure needs, but several listed training. The lists were often divided into projects. In this Annex just two of the Normal Schools are presented. The complete listings are available in the Section of Pre and In-Service Training of MED.

Normal School at Jinotepe - List of projects

1. Improving technical cooperation with the "nucleos."
2. Improving influence of Normal School in primary schools of the Department of Carazo as Application Centers for Practice Teaching.
3. National and international training for the Normal School teachers.
4. Construction of facilities for 200 intern students.
5. An internal audio system.
6. Multiple field for sports activities.
7. Transportation system.
8. Computer software and hardware.
9. Video cassette with documentary programs.
10. Musical instruments.
11. Painting the school and fixing the roof.

Normal School at Estell

1. Training courses in school organization and administration, general methodologies, use of the library, use of laboratories, educational supervision, educational evaluation, teaching-learning theory.
2. Materials such as: maps, geometric instruments, bibliography on universal literature, slide projector, video, television, movies, sports equipment, painting and drawing material, tape recorder.
3. Closets for 300 students.
4. Kitchen utensils.
5. Chairs and tables for the dining room.
6. Transportation - station wagon and bus.
7. Improve water facilities.
8. Construction of a new kitchen and dining room.

APPENDIX X-1

Illustrations of Household Study

Illustrations from Household Study

Municipio of Mateares on the outskirts of Managua:

This community of some 20,000 is a mixture of fishermen, factory workers, unskilled wage-laborers, agricultural workers, shopkeepers, and a variety of self-employed residents. In addition to visiting the school, the Municipality, and the Delegación Municipal, three households near the Escuela Pancasán were randomly selected for interviews.

The first household consisted of a husband, wife, another adult woman, and their three children, living in a single room, serving as both kitchen and sleeping quarters for six people; the floor was dirt, the walls were roughly hewn wooden planks, and the roof made of corrugated metal with gaping holes. Their source of income was from the baking *rosquillos* and *empanados* prepared and deep fried by the women beginning every day at 2:30AM. The husband then takes the baked goods and sells them during the day, but the wife said that sales were extremely slow and proceeds were not enough to cover family expenses.

After the baking is finished, the women have to clean the kitchen and get the children ready for school; they vigorously complained about the cost of school books and other supplies and said that they were having serious problems making ends meet. Based on the brief observation made during the interview, the youngest child looked quite malnourished: he was very pale, listless, had an extended abdomen, and looked very stunted for his six years.

A local secondary school teacher lived in the second house which was much better than the first. The walls were made of cement blocks, the floor was cement, and the metal roof was in good shape. The teacher was a single mother with four children, and the two oldest were in first and sixth grade. In order to supplement her meager teaching income, she sells clothes out of her house. Racks of shirts, pants, and skirts were observed along a back wall of the dark room. The mother indicated that business was slow because no one had any money to buy new clothes because everything was spent on food. She said that keeping her children in school and buying books and supplies was increasingly difficult, but that she would manage.

In the third house, a 35 year-old father, who was watching TV with his 7 year-old son, was interviewed. His house was a store selling snacks, soft drinks, fruit, and vegetables. When asked about the cost of buying text books, he said it was OK to rent them, but that education should be free. A low rental fee of a few Córdoba was appropriate and something that most people should be able to afford. He went on to say that 80% of the people in Mateares with jobs work in Managua, the rest work in agriculture and fishing. He felt that about 60% of the children in his community were malnourished because of the extremely low incomes.

On the way to the Region VI offices in Matagalpa, a stop was made in a small community called Las Palomas along the side of the road in the municipio of Sebaco. The teachers and the Técnico del Municipio said this community was in desperate straits, but that it was not an exception because so many were experiencing the same difficulties, extremely low incomes and not enough to eat. While in the community, two randomly selected households were visited.

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A pregnant mother with three children aged 2, 3, and 8, lived in a two-room structure with a dirt floor made from waste materials such as pieces of wood, cardboard and plastic sheets. The small house was divided into a kitchen and sleeping area. She makes her living from selling eggs, only has 4 hens left; she had to sell the other six to keep from starving after her man left last October. The number of eggs she can sell is not enough to buy food, and she has to rely on what little some of her neighbors can give her. Their daily diet consists of tortillas and salt, and she can only occasionally afford to buy beans. The day of the visit, there was a small pot of beans cooking on the raised wood-burning stove, consisting of an old, partially broken, clay pot resting on three stones. Her three children appeared frail and malnourished. The oldest was very quiet, and the mother said that she had not sent him to school because he doesn't speak well. He may quite possibly have been retarded. She went on to say that her children have intestinal parasites, but she has not brought them to the health center because she can't leave her house unattended. She would like to return to her village near Chinandega but cannot afford to move, and she is afraid that her children will die of hunger in the process. Near the end of the interview, she said that she does not want the child she is carrying and wishes the father would simply come and take it away.

A mother, her 7 year-old daughter, and co-resident husband lived in the second house visited. This house also had a dirt floor but was made of better materials and appeared a little more prosperous than the first. The daughter attends first grade, and her mother bought a notebook and pencil at what she considered excessively high prices. Her husband is an agricultural wage laborer who can only get work during the rainy season, but he is sometimes able to supplement his income from temporary work processing beans on a local coffee plantation. At the time of the interview, he was completely out of work. Their diet consists of tortillas and salt and beans which they cannot always afford. When her husband is working, the family can afford meat about once a week, but now meat is no longer sold in the community, and she does not have enough money for bus fare to Sebaro.

APPENDIX XII-1

Current MED donor Assisted Projects

ASIGNACIONES PRESUPUESTARIAS POR TIPO DE RECURSO Y FUENTE DE FINANCIAMIENTO

Recibido 30 oct 1990 E. Adorno

Año: 1991

2. Organismo

3. Subprograma SECRETARÍA GENERAL

4. Actividad PROYECTOS 6. Unidad Ejecutora

CÓDIGO PRENL	DESCRIPCIÓN	TIPO REC.	FUENTE FINAN.	CREDITOS MONTO US\$	PROGRAMACIÓN		
					ENERO	FEBRERO	MARZO
0	9	10	11	TOTAL 12	13	14	15
	<u>Dirección de Planificación</u>						
	Desconcentración y Descentralización Administrativa.	Ext. (3)	00	29.004.00			
	Red Bibliotecas Escolares	"	08	33.500.00			
	Capacitación a distancia a planificadores, administradores y supervisores a nivel local.	"	Noruega 13	71.900.00			
	<u>Educación de Adultos</u>						
	Apoyo a la implementación de la estrategia nacional de alfabetización y Educ. popular de adultos.	"	Finnland 13	152.670.00			
	Contribución al desarrollo de los sectores priorizados del campo.	"	"AL	45.000.00			
	<u>A.T.M.</u>						
	Rehabilitación industrial de la empresa gráfica COMPANIC.	"	NBS EC	384.500.00			
	<u>Imprenta Antonio Pflaum</u>						
	Capacitación técnica gráfica en la Imprenta Tonio Pflaum.	"	Finlandia	595.445.00			
	<u>RECONSTRUCCIÓN</u>						
	Reconstrucción de aulas dañadas por el huracán Juanita en la Región 5.	"	VE	66.0000,00			
	16. TOTAL						
	17. REC. ORDINARIOS						
	18. REC. EXTRAORDINARIOS						

19. MONEDA

20. UNIDAD

21. FECHA

DEL PRESUPUESTO
 ASIGNACIONES PRESUPUESTARIAS POR
 TIPO DE RECURSO Y FUENTE DE FINANCIAMIENTO

1991

2. Organismo

3. Oficina DIRECCION SUPERIOR

4. Subprograma SECRETARIA GENERAL

5. Actividad

6. Unidad Ejecutora

DISEÑO CENSO	DENOMINACION	TIPO REC.	FUENTE FINAN.	CREDITOS	PROGRAMACION		
					ENERO	FEBRERO	MARZO
0	9	10	11	12	13	14	15
	<u>Educación Técnica</u>						
	Cooperación al Sector Forestal	Rec. Ext. (3)	22(MSD)	958.880.00			
	Rejuvenecimiento de la calidad de la Educación Técnica	"	Ferranueva-Italia	30.000.00			
	Capacitación de Recursos Docentes de Educación Técnica.	"	08	297.970.71			
	Formación Profesional	"	GTZ/PIA	100.000.00			
	<u>Educación General Básica</u>						
	Planificación e Innovaciones Curriculares	"	08	13.000.00			
	Cooperación Técnica con el MED	"	INCAP-14	11.200.00			
	Educación en Población	"	05	58.319.00			
	Apoyo Técnico-Pedagógico al programa de Desarrollo Educativo Comunal.	"	20(MLAL)	19.700.00			
	Educación Especial	"	Ferranueva-Ital	38.635.00			
	Apoyo a la transformación en escuelas de Educación Básica en el área rural.	"	Noruega 13	382.500.00			
	Pre-escolares comunales, Fase III.	"	Van Leer 2	540.600.00			
	Apoyo de UNICEF a la Educación	"	07	324.000.00			
	Educación Especial	"	Inst. Promoc. Ap. al D.	20.000.00			
	16. TOTAL						
	17. REC. ORDINARIOS						
	18. REC. EXTERNOS						

19. NOVIEMBRE

20. DICIEMBRE

21. ENERO

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RESUMEN
TIPO DE RECURSO Y FUENTE DE FINANCIAMIENTO

Año: 1991

Programa DIRECCION SUPERIOR 2. Organismo
 Actividad 4. Subprograma SECRETARIA GENERAL
 6. Unidad Ejecutora _____

FECHA	DESCRIPCION	TIPO DE RECURSO		CREDITOS	PROGRAMACION		
		REC. INT.	REC. EXT.		ENERO	FEBRERO	MARZO
0	1	10	11	12	13	14	15
	Apoyo al programa educativo Bilingue-Bicultural.	Rec. Ext. (3)	Pan pa- ra el Mundo	130.000.00			
16. TOTAL							
17. REC. CONTINUOS							
18. REC. EXTERNOS							

19. INGRESOS 20. FIRMA 21. FECHA

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REGIONES

DATOS ACTUALIZADOS SOBRE LOS PROYECTOS DE LAS REGIONES
1990 - 1991

REGION I

NOMBRE DEL PROYECTO	FUENTE DE FINANCIAMIENTO	UBICACION GEOGRAFICA	SITUACION FINANCIERA			PROYECCION PARA 1991
			MONEDA INGRESO	NORTAMERICANA EGRESO	SALDOS	
PRODERE.						
1. Equipamiento a Escuelas Rurales.	Gobierno Italiano.	San Juan de Río Coco	Pendientes	Pendientes	-	USA \$ 35,400.00 Pendiente de entrega. Aprobado para 1991.
2. Construcción de 2 canchas y equipamiento.	Gobierno Italiano.	San Juan de Río Coco.	Pendientes	Pendientes	-	USA \$ 41,000.00 Pendiente de entrega. Aprobado para 1991.
3. Equipamiento de dos Bibliotecas.	Gobierno Italiano.	San Juan de Río Coco.	Pendientes	Pendientes	-	USA \$ 26,000.00 Pendiente de entregar. Aprobado para 1991.
4. Diagnóstico Zonal.	Gobierno Italiano.	San Juan de Río Coco.	Pendientes	Pendientes	-	USA \$ 1,800.00 Pendiente de entrega. Aprobado para 1991.
5. Construcción y reparación de aulas.	Gobierno Italiano.	San Juan de Río Coco.	Pendientes	Pendientes	-	USA \$ 64,600.00 Pendiente de entregar. Aprobado para 1991.
6. Capacitación a Instructores.	Gobierno Italiano.	San Juan de Río Coco.	Pendientes	Pendientes	-	USA \$ 2,200.00 Pendiente de entrega. Aprobado para 1991.
7. Mobiliario escolar.	Gobierno Italiano.	San Juan de Río Coco.	Pendientes	Pendientes	-	USA \$ 8,270.00 Pendiente de entregar. Aprobado para 1991.
8. Capacitación a Instructores.	Gobierno Italiano.	San Juan de Río Coco.	Pendientes	Pendientes	-	USA \$ 3,600.00 Pendientes de entregar. Aprobado para 1991.

NOMBRE DEL PROYECTO	FUENTE DE FINANCIAMIENTO	UBICACION GEOGRAFICA	SITUACION FINANCIERA			PROYECCION PARA 1991
			MONEDA NORTEAMERICANA INGRESO	EGRESO	SALDOS	
9. Construcción de 13 aulas.	Gobierno Italiano.	San Juan Río Coco.	Pendientes	-	-	USA \$ 61,700.00 Dinero pendiente de entrega. Proyecto aprobado para 1991.
10. Capacitación a Instructores.	Gobierno Italiano.	San Juan Río Coco.	Pendientes	-	-	USA \$ 3,600.00 Pendiente de entregar. Aprobado para 1991.
11. Construcción de 3 aulas-taller.	Gobierno Italiano.	San Juan Río Coco.	Pendientes	-	-	USA \$ 14,520.00 Este dinero está pendiente de entrega para Julio 91, pero fue aprobado por el programa.
12. Equipamiento de mobiliario básico y otros.	Gobierno Italiano.	Quilalf.	Pendientes.	-	-	USA \$ 7,410.00 Pendiente de entregar. Aprobado para 1991.
13. Capacitación.	Gobierno Italiano.	San Juan de Río Coco y Quilalf.	6,323.00	6,323.00	0	USA \$ 6323.00 Este Proyecto se ejecutó a partir del mes de Junio de 1990.
14. Equipamiento de Escuelas.	Gobierno Italiano.	San Juan de Río Coco y Quilalf.	12,350.00	12,350.00	0	USA \$ 12,350.00 Este proyecto se ejecutó a partir del mes de Junio de 1990.
Generales.						
15. Reparación y Mantenimiento de Escuelas (Bayron Jiménez y Los Hatillo).	Esc. de RUNBY (Suecia).	Pueblo Nuevo.	2,000.00	2,000.00	0	USA \$ 2,000.00 Este Proyecto fue ejecutado por el Delegado Municipal de Pueblo Nuevo. Prof. Salvador Obando R.

NOMBRE DEL PROYECTO	FUENTE DE FINANCIAMIENTO	UBICACION GEOGRAFICA	SITUACION FINANCIERA MONEDA NORTEAMERICANA			PROYECCION PARA 1991.
			INGRESO	EGRESO	SALDOS	
P Q D R I. 16. Capacitación y Profesionalización a Maestros Empíricos.	U N I C E F	Limay, Macuelizo, Yalaguina, Telpaneca, Cusmapa, Sta. María, San Lucas y Las Sabanas.	12,600.00	12,600.00	0	USA \$ 12,600.00 Este dinero se utilizó para los Cursos Intensivos con duración de 7 semanas con modalidad de internado para 120 maestros empíricos.
17. Capacitación a Maestros Multigrados.	U N I C E F	Limay, Macuelizo, Yalaguina, Telpaneca, Cusmapa, Sta. María, San Lucas y Las Sabanas.	1,900.00	1,900.00	0	USA \$ 1,900.00 Se encuentra un saldo en caja chica de USA \$ 300.00
18. Capacitación a Maestros Populares.	U N I C E F	Limay, Macuelizo, Yalaguina, Telpaneca, Cusmapa, Sta. María, San Lucas y Las Sabanas.	3,100.00	3,100.00	0	USA \$ 3,100.00 Este dinero fue aplicado al Proyecto asignado.
Proyectos de impacto. Propuesta para 1991. Construcción de aulas, Reparación de aulas y Equipo de escuelas.	A C N U R	Jícaro.	USA \$	49,000.00 14,000.00 <u>41,700.00</u>		
			TOTAL	104,700.00		
	A C N U R	Jalapa.	USA \$	62,500.00 9,800.00 <u>41,840.00</u>		
			TOTAL	114,140.00		

NOMBRE DEL PROYECTO	FUENTE DE FINANCIAMIENTO	UBICACION GEOGRAFICA	SITUACION FINANCIERA PROPUESTA EN MONEDA AMERICANA
Proyectos de impacto. Propuesta para 1991.			
Construcción y Reparación de aula. Equipo de escuelas.	A C N U R .	Murra.	USA \$ 28,000.00 14,000.00 20,500.00
			<u>TOTAL 62,500.00</u>
	A C N U R .	Totogalpa.	12,000.00 2,800.00
			<u>TOTAL 14,800.00</u>
	A C N U R .	Dipilto.	10,838.00 3,835.00
			<u>TOTAL 14,673.00</u>
	A C N U R .	Santa María.	7,000.00 4,200.00
			<u>TOTAL 11,200.00</u>
	A C N U R .	Macuelizo.	28,000.00
			<u>TOTAL 28,000.00</u>

NOMBRE DEL PROYECTO	FUENTE DE FINANCIAMIENTO	UBICACION GEOGRAFICA	SITUACION FINANCIERA PROPUESTA EN MONEDA AMERICANA	
Proyectos de impacto. Propuesta para 1991.	A C N U R .	Mozote	USA \$	31.500.00
			3,500.00	
			11,200.00	
			11,500.00	
			TOTAL	57,700.00
A C N U R .	Ocotlan	67,400.00		
		21,000.00		
		21,000.00		
		TOTAL	109,400.00	
		A C N U R .	Somoto.	21,000.00
25,200.00				
34,550.00				
TOTAL	80,750.00			
A C N U R .	Regional.			20,000.00
		TOTAL	20,000.00	
		A C N U R .	La Trinidad.	4,200.00
3,500.00				
TOTAL	7,700.00			

REGION II

La Región II nos informó que por dirección del nuevo gobierno toda gestión de cooperación externa se hace a través de la Alcaldía; de manera que la Alcaldía ejecuta.

REGION III

La información del semestre anterior continúa igual. Con la salvedad de que el departamento de proyectos recientemente formado está trabajando en recopilar y ordenar la información.

Han realizado investigaciones valiosas al respecto, cuyo análisis estará listo en dos semanas.

REGION IV

NOMBRE DEL PROYECTO

FUENTE FINANCIERA

UBICACION GEOGRAFICA

SITUACION FINANCIERA

Construcción de Escuelas en la Región.

Grupos Sofonías.

Mayaya:
Los Altos, Las Conchitas, Guanacastillo, La Reforma, Llano Grande, Malacatoya, Los Ruices, Valle La Leguma y El Comején.

Granada :
Nandaimé, San Juan del Sur.

Carazo :
Jinotepe, Las Esquinas, San Marcos, La Concepción de María, Pátima y El Tangué.

Los fondos los administra la fuente financiera y su compromiso consiste en entregar aulas nuevas.
El costo global del proyecto asciende a US\$ 120,000.00 aproximadamente.

El Grupo Sofonías, informó que para 1991, el proyecto Escuelas será suspendido.

1991

REGION V

NOMBRE DEL PROYECTO	FUENTE DE FINANCIAMIENTO	UBICACION GEOGRAFICA	SITUACION FINANCIERA Nota: La encargada de finanzas de proyectos en la región está de vacaciones.
1. Mejoramiento Educativo Regional.	Comunidad Económica Europea.	Región V. Priorizando Boaco.	Este lo administra la sede central y queda aproximadamente para 1991 23,000 dólares y en la nueva propuesta una posible ampliación.
P Q D R I. 2. Programa Quinquenal de desarrollo Rural integral.	U N I C E F .	Boaco, Santa Lucía, San José, Cusmapa, San Lorenzo, Juigalpa y Acoyapa.	La región administra los fondos, el proyecto inició en 1990 con 110,000 dólares y se gastó 118,000. para 1991, tienen una propuesta de 104,348.
1. Adquisición de materiales didácticos para Educación de Adultos.	Asociación para el Desarrollo de los pueblos.	" " "	Lo administra la O. N. G. MED Sede Central.
1. Adquisición de Materiales de Construcción.	Comité Australiano.	Nueva Guinea, Rama y Mueye de los Bueyes.	Lo administra la O. N. G. MED Sede Central.
2. Alimentación para cursos de	Comité Religioso Canadiense.	Rama.	Administra el mismo comité.

REGION VI

NOMBRE DEL PROYECTO	FUENTE DE FINANCIAMIENTO	UBICACION GEOGRAFICA	SITUACION FINANCIERA		
			M O N E D A INGRESO	EGRESO	A M E R I C A N A SALDO PARA 1991
PRODERF. 1. Desarrollo Educativo para realfabetizar.	P. N. U. D Italia	Pantasma	150,000	150,000	0 Nota: Administra la re- gión. Existe Convenio aproba- do para 1991 de un mon- to aproximado de 300,000.00.
2. Equipamiento de Mobiliario- Materiales de Construcción					
3. Reparación de aulas.					
P.Q.D.R.I.: 4. Cursos de profesionaliza- ción.	U N I C E F	Cus, Bocay y Norte de Jinotega.	300,000	300,000	0 Administra la región. Continuará en 1991.

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APPENDIX XII-2

Radio Study

IDEAS AND SUGGESTIONS FOR RADIO EDUCATION IN NICARAGUA
A radio education project a solution to solve educatives
problems in Nicaragua
Presented to the Nicaragua Primary Education Assessment Team

MANAGUA, NICARAGUA C.A
MARCH 21, 1991

MARIA ANZOATEGUI

A brief history of radio education in Nicaragua.

There are some previous educational radio programs in Nicaragua. One is Pequeñas Lecciones de Música (Little Music's Lessons). This was Salvador Cardenal Arguellos' program of music. Pequeñas Lecciones de Música is on the air every day, between 8, and 10 in the morning, at 1, and 5 in the afternoon, and at 9 in the evening. The program lasts fifteen minutes. According to the author of the program, Cardenal Arguello, the lessons are not technical or professional, but they are for pleasure. In a lesson he may discuss philharmonic, and symphonic orchestra along with the sound of the various instruments used in the respecting orchestra. For example, percussion, winds like English horn, and strings, such as violin or guitar. There is a different lesson every day, and on Sundays a summary of the lessons of the week is broadcasted. This program is heard only in the city of Managua on Radio Gueguense. Actually, one can buy the lessons at the price of twenty cordobas or not including the cassette.

Other educational programs are Dr. Julian N. Guerrero conferences about the history of Nicaragua. One is called

Escuela Radial Nicaraguense (Nicaragua's Radial School), a program patrocinated by the city of Managua. The conferences are held on Fridays and Saturdays at seven p. m. and last twenty-five minutes. In his themes about Nicaragua, he may discuss Cristopher Columbus fourth trip when he discovered Nicaragua. Similarly Nicaragua's independence, or the origin of the name of the country, Nicaragua derived from El Cacique Nicaraao, a native chief of this country. Each month Dr. Guerrero will discuss one department of Nicaragua, such as Masaya, or Chontales. There are eight lectures per month and the program is going to be on the air for two years. Escuela Radial Nicaraguense is heard on Radio Corporacion. This is a radio that has a national coverture meaning that is heard in all Nicaragua's national territory. Dr. Guerrero's other series of lectures are called Estampas de Nicaragua (Views on Nicaragua). This program is on the air on Sundays at two o'clock in the afternoon on radio El Pensamiento (The Thought). This program discusses not only Nicaragua, but other places of Central America as well. Radio El Pensamiento, because of its low frequency it is heard only in places close to the capital.

Escuela Para Todos (School For All) is presented in Managua by Radio Mundial early in the morning at five thirty lasting thirty minutes until six a. m. The program begins with a song: Through the Radio Comes the School. Escuela para Todos is a program based on questions, and has a specific theme every day, for example, people from different places in Central America ask questions such as what kind of materials does the solar system contain? Or does the Hierba Buena flowers, and when? Hierba Buena is a native spice of Central America. This program is recorded in Costa Rica, and it has been on the air for many years. See an example of the almanaque about this program published by (ICECU) Instituto Centroamericano de Extension de la Cultura (Central American Institute of Cultural Extension). The almanaque is a review of different programs presented in Escuela para Todos.

In addition, many years ago, in the sixties, Escuelas Radiofonicas de Nicaragua (Nicaragua's Radiophonic Schools) began a literacy program. This was a program of education coordinated for country people. Here, together in a center (any house) people in different towns of Nicaragua did learn to write, and read, in a similar way math, and the Bible

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were part of the classes. The program did last until 1980. See example of the teaching manual. See example of Escuelas Radiofonicas' teaching manual.

Similarly, The National Cruzade of Alphabetization developed another literacy program in 1980. This program was sponsored by the Ministry of Education. For this, Nicaragua was transformed into a big school, and teachers, and students went to teach to read and write. The name of the radio program was Puno en Alto, and it was on the air every day on a national broadcast. A notebook of popular education was developed. See example of this notebook, called, El Amanacer del Pueblo (The Town's Sunrise).

Also, many years ago there was a program Somos Sociales (We are Social) directed by professor Sandoval. This program was about human relations, moral, and good behavior, and it was broadcasted in the radio station, Radio Mundial.

From 1974 to 1978 for five years, the ministry of education had a special program patrocinated by A I D. This was a program of mathematic specially designed for elementary school. The program was addressed to urban and rural areas. A study revealed that children at the same



grade level did learn more than children who were not in this program. In 1976, this Math Program won the Japan prize in the annual competition on the use of media in teaching. Later on, A I D used this program in Thailand, Philipines, Dominican Republic, Africa, and in other countries of Latin America as well. There is a publication relating the experiences of the program. Miss Jamesine Friend from Stanford did work on the program as director, Mr. Klaus Galda, and Mr. Juan Jose Montenegro, telephones: work 50828 - extension 2762. Home- Masaya 052-2663, from the ministry of education was responsible for teacher training, and didactic material. Mr Montenegro has the curricular development of mathematics for this program including didactic material, cassettes, and teachers' manual.

Today, other programs are directed to country people, such as Escuelas Radiofonicas' program La Salud es Fundamental (Health is Fundamental), Radio Corporacion's program on Agriculture, Silvestre Madero, wich every day early in the morning is on the air, and Radio Catolica, Despertando el Campo (Waking up the Field) specially for rural people. The program, La Salud es Fundamental is broadcast in several cities of Nicaragua like Ocotal,

Matagalpa, Chontales, Chinandega, Granada, and Managua. Besides, Escuelas Radiofonicas de Nicaragua publish a newspaper Countryman's voice related to the health program.

How feasible would it be to make a radio education program in Nicaragua?

There are qualified people to record educational programs in Nicaragua. Among them are Profesor Julio Cesar Sandoval who has been working on educational programs for many years. His telephone number is 44219. Javier Fonseca, and Justo Rufino Meneses from Radio Catolica have recording experience also. Justo Rufino Meneses records Pancho Madrigal, a popular program in Nicaragua. These people have access to a recording room and all the necessary equipment to record programs. They also have access to musical records that are very important in radio programs because musical sounds identify and characterize the program. Javier Fonseca says that he can record five programs per day thus, in a month he will record one hundred programs. Therefore, three months work are necessary for three hundred programs. A year programs may be recorded on cassettes, four programs can be recorded on each cassette, and their cost in Nicaragua is one U. S. dollar. During

the scholar year a Radio Education Pilot Project will require 192 cassettes. People who broadcast work on contracts, although they rather make personal contracts, and charge by time. Also, a fifteen minutes program on the air costs one hundred and ninety seven cordobas in the radio station, Radio Mundial. Radio Corporacion for the same time charges one hundred and twenty five U. S. dollars.

Experienced text writers are profesor Sandoval, telephone 44219, and Eduardo Romero from Radio Nicaragua telephone 72330. Twenty programs need to be written per month, one program every day. Thus, in Nicaragua there are human resources and facilities to implement a radio education project. Therefore, it is feasible a radio education project in this country.

What will be the conditions that will make a radio education program a success?

Definition of the objectives of the program, planification, design, and selection of the content of the text. The content of the program is an important factor for the success of the program. This has to be written in a creative way, and at the same time it has to be educative which means applying pedagogic principles through the radio.

For this, ideas can be expressed in different kinds of programs such as reviews, or radio theater. This is a challenge, because it is working with different and special elements such as the human voice, music, and sound effects.

Why radio education project, and what will be the purpose?

The purpose will be to be able to communicate knowledge to people who live in rural areas. In Nicaragua there are many rural areas where it is difficult to send a teacher, there are many places where children do not have school. A radio education program will help people, the ones who live in far away places like in rural areas so they can integrate to their community life. Most of these people owns a radio, and they are used to listen to the radio. Today the radio is integrated into their daily life. The element radio travels with them in the canoe, while riding a horse, or simple when walking from place to place. Therefore, the target, the audience is the rural people who will benefit, and enrich their live through a radio education project.

Who should implement this program, and for how long.

The ministry of education should implement this program due to the fact that this entity has the educators, and the

instructional material that are necessary for this task. A pilot program, during the school year could help to gain the necessary experience for this project. For this, to begin with an area, for example with the departments of Chontales and Boaco that are located in the central part of Nicaragua, and expand the program to the rest of the country as mediums allow it.

What will be the content of the program?

The content will be Spanish, Mathematics, Social Sciences and Natural Sciences. Audience will be learning from the beginning the letters of the alphabet, the vowels and consonants in order to learn to read and write. In mathematics they will learn the numbers, so that they will be able to count, add, subtract and divide.

The Social Sciences and Natural Sciences will give a variety to the program. Here students will learn about plants, and or animals, what would be the best way to grow pigs or chickens, or how to cultivate coffee, beans and rice, and even flowers.

In Social Sciences students will learn about the geography of Nicaragua, about its rivers, mountains and lagoons.

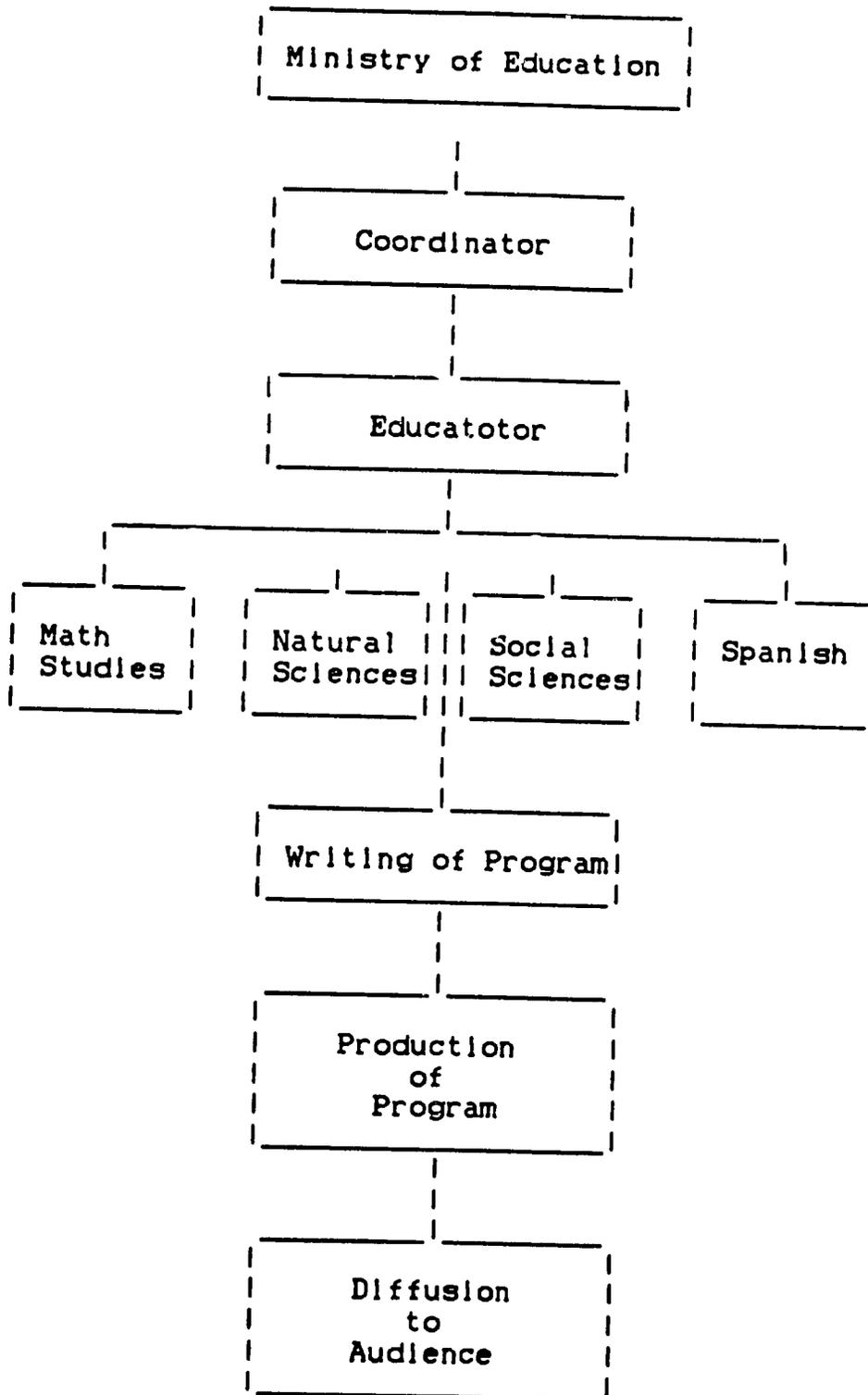
Here in the program students will find out how rivers grow, and where do they go. They will understand the mystery of why there are earthquakes, and how volcanoes erupt. They will hear about the ancient people of Nicaragua where they lived, the different city structure, and their art. How these people made a unique art, an art where their values ideas, and customs were expressed.

To elaborate the content a radio specialist and one educator for each main subject-area will need to work together in the planification of the program. Educators in the planification of programs will follow the content and methodology developed by the ministry of education. The radio specialist works with sounds, voices and musical effects since these elements add color and variety to each lesson, thus appealing to the sense of hearing. For example, when reading numbers the narrator may use one sound for number one, for number two, two sounds, number three, three sounds, etc. Also when reading letters, music like Sesame Street that sings each letter can be heard, because this facilitates children the learning process, and besides the children learn how to sing the letters. In this manner, programs will have an educative content and an attractive presentation. In this way, these educational radio programs

presented by the ministry of education will become a part of
the daily life of rural people in Nicaragua.

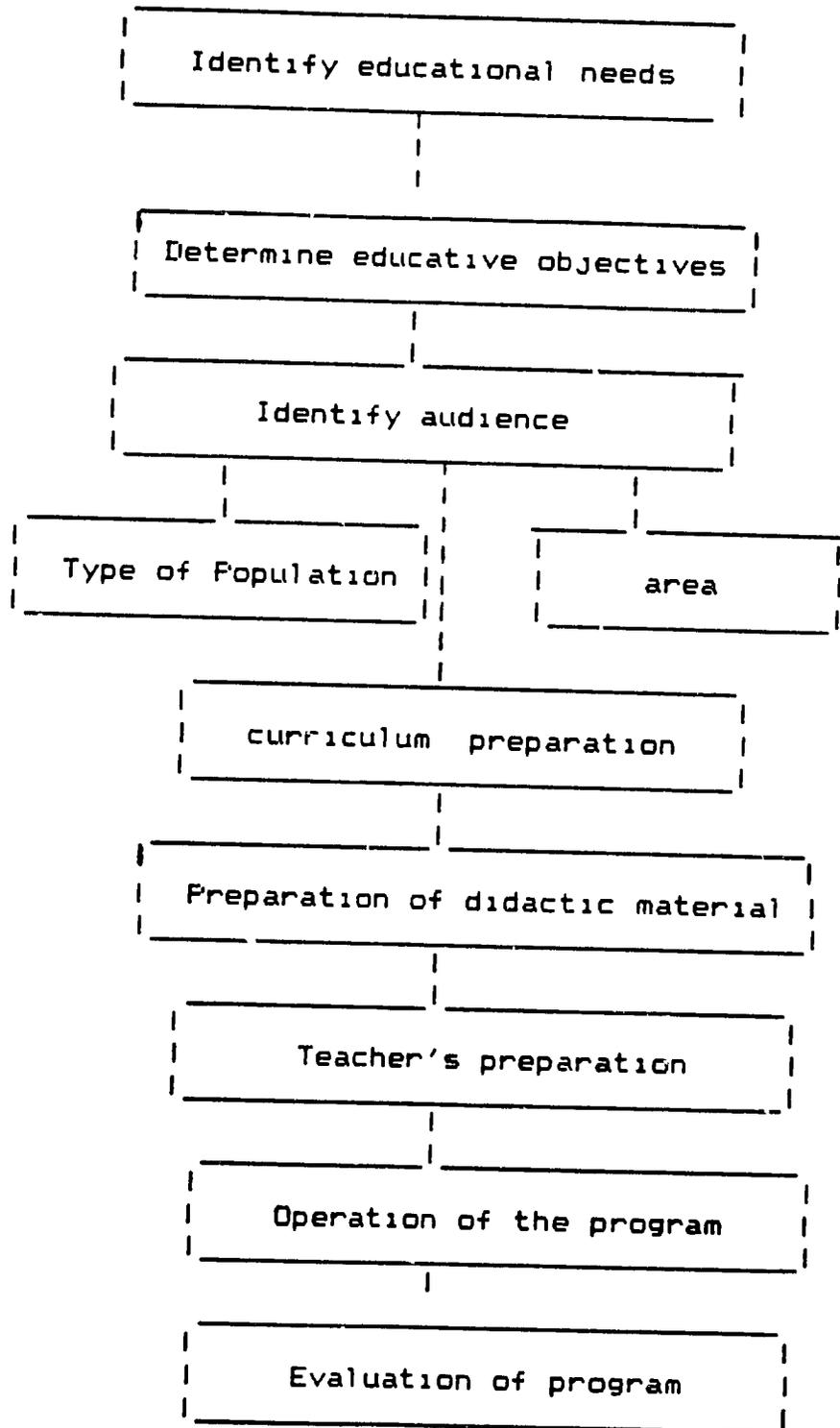
A suggested title for a radio education project in
Nicaragua. AZUL Y BLANCO
Blue and white are the colors of the Nicaraguan flag, and
Azul y Blanco is the name of the new reading texts for
elementary.

Organizational Chart Process for Radio Education Program



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PLANIFICATION PROCESS FOR RADIO EDUCATION PROJECT



COSTS

BROADCAST PERSON - 20 programs per month \$500 per month	\$4.500
RECORDER - Records 5 programs per day \$400 per month 3 months	\$1.200
CASSETTES - 1 cassette per week - 192 cassettes during school year - \$1.00 dollar each	\$ 960
RADIO SPECIALIST - 20 programs per month - nine months \$1.000	
SPACE IN THE RADIO - 15 minutes per month (Radio Mundial)	\$196.87
TOTAL CORDOBAS ORO	<u>\$15.856.87</u>

OTHER COSTS ARE:

EDUCATORS -

PUBLICATION OF PROGRAMS -

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Radio Stations that have Educational Programs

Radio Corporacion
Director: Jose Castillo Osejo
Phone: 40860 - 42339
Address: Ciudad Jardin Q-20
Educational Program: Dr. Julian N. Guerrero's Conferences

Radio Gueguense
Director: Lorenzo Cardenal
Phone: 44696
Address: Ciudad Jardin N-23
Educational Program: Pequeñas Lecciones de Musica

Radio El Pensamiento
Director: Alan Tefel
Phone: 71616 - 671000
Educational Program: Estampas de Nicaragua

Radio Mundial
Director: Alma Rosa Arana
Phone: 666767 - 666768
Educational Program: Escuela para Todos

Other Radio Stations

RADIO STEREO AZUL
Phone: 42297
Address: Repto Bello Orizonte R-I-11

RADIO TIEMPO
Phone: 719.4 - 72470
Address: Repto Pancasan VII Etapa casa No.217.

RADIO TROPICAL
Phone: 97019 - 97063 - 97100
Address: Mcdo Ivan Montenegro

RADIO CATOLICA DE NICARAGUA
Phone: 70893 - 72498
Address: Altamira D'Este No.621

RADIO DEPORTES
Phone: 22792 - 23440 - 22835
Address: Casa Ricardo Morales Aviles 1 1/2c. al Sur

RADIO EL FABULOSO 7
Phone: 50536
Address: Surmen 1c. abajo 2c. al Sur No.15. Colonia Heroes y Martires del Bocay

RADIO MIL

Phone: 43897
Address: Ciudad Jardín. Casa Q-31

RADIO SANDINO
Phone: 25404 - 25982 - 26296 - 26155
Address: Central telefonica paseo Tiscapa. Apartado-4776

RADIO ONDAS DE LUZ
Phone: 23140 - 22755
Address: Apartado-607

RADIO COMUNICACIONES NICARAGUENSES
Phone: 70852 - 70853
Address: Altamira D'Este donde fue Sucursal Inmobiliaria

RADIO CONTINENTAL
Phone: 42047
Address: Jardín de Sta Clara Plante 1 Inaa 3c al Norte

RADIO CORPORACION
Phone: 40869 - 42339
Address: Ciudad Jardín O-20

Most Popular Radios in Nicaragua

Radio Corporacion

Radio Nicaragua

Radio Catolica

Radio Sandino

Radio Ya

Radio El Pensamiento

Radio Mundial

The first four radio stations have a national coverage meaning it is heard around the country.

Radio Ya and radio el Pensamiento because of the low frequency are heard only in Managua and places close to the capital. Radio Mundial is heard only in Managua and in some departments of the country.

Best Time To Be in the Air

This means the time when people listen to the radio, and the time is from five to seven in the same manner in the afternoon.

Early in the morning
5 a.m.

In the afternoon
4 p.m.

3/6

6 a.m.
7 a.m.

5 p.m.
6 p.m.

Some Narrators and Recorders to Record Radio Programs

Conrado Fineda -	Radio Corporacion
Lombardo Rueda -	Radio Nicaragua
Fabio Gadea Mantilla -	Radio Corporacion
Javier Fonseca -	Radio Catolica
Bernardo Antonio Galo -	Radio Mundial
Alberto Ordonez -	Radio Corporacion
Fabio Gadea Mantilla -	Radio Corporacion
Carlos Vellorini -	Radio Catolica de Nicaragua
Eric Rey -	Radio Gueguense