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DEPARTMENT OF STATE  
AGENCY FOR INTERNATIONAL DEVELOPMENT  
Washington, D.C. 20523

PROJECT PAPER

Proposal and Recommendations  
For the Review of the  
Development Loan Committee

NICARAGUA - RURAL EDUCATION DEVELOPMENT

AID-DLC/P-2219

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**DEPARTMENT OF STATE**  
**AGENCY FOR INTERNATIONAL DEVELOPMENT**  
**WASHINGTON, D.C. 20523**

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AID-DLC/P-2219  
March 18, 1977

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Nicaragua - Rural Education Development

Attached for your review is the recommendation for authorization of a loan to the Republic of Nicaragua of not to exceed Ten Million United States Dollars (\$10,000,000) to help in financing certain foreign exchange and local currency costs of goods and services required for the project.

This loan is scheduled for consideration by the Development Loan Staff Committee on Thursday, March 24, 1977, at 10:00 a.m., in Room 3886 New State. If you are a voting member, a poll sheet has been enclosed for your response.

Development Loan Committee  
Office of Development Program  
Review

Attachments:

Summary and Recommendations  
Project Analysis  
Annexes A - Z

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AGENCY FOR INTERNATIONAL DEVELOPMENT  <b>PROJECT PAPER FACESHEET</b>	1. TRANSACTION CODE <input type="checkbox"/> A ADD <input type="checkbox"/> C CHANGE <input type="checkbox"/> D DELETE <div style="border: 1px solid black; display: inline-block; padding: 2px;">A</div>	PP  2. DOCUMENT CODE <b>3</b>
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3. COUNTRY ENTITY <b>NICARAGUA</b>	4. DOCUMENT REVISION NUMBER <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>
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5. PROJECT NUMBER (7 digits) <div style="border: 1px solid black; padding: 2px;">524-0115</div>	6. BUREAU OFFICE A. SYMBOL <b>L.A.</b>	B. CODE <div style="border: 1px solid black; padding: 2px;">05</div>	7. PROJECT TITLE (Maximum 40 characters) <div style="border: 1px solid black; padding: 2px;">Rural Education Development</div>
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8. ESTIMATED FY OF PROJECT COMPLETION FY <div style="border: 1px solid black; padding: 2px;">8</div> <div style="border: 1px solid black; padding: 2px;">2</div>	9. ESTIMATED DATE OF OBLIGATION A. INITIAL FY <div style="border: 1px solid black; padding: 2px;">7</div> <div style="border: 1px solid black; padding: 2px;">7</div> B. QUARTER <div style="border: 1px solid black; padding: 2px;">2</div> C. FINAL FY <div style="border: 1px solid black; padding: 2px;">8</div> <div style="border: 1px solid black; padding: 2px;">2</div> (Enter 1, 2, 3, or 4)
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10. ESTIMATED COSTS \$000 OR EQUIVALENT \$1 -						
A. FUNDING SOURCE	FIRST FY <u>77</u>			LIFE OF PROJECT		
	B. FX	C. L. C.	D. TOTAL	E. FX	F. L. C.	G. TOTAL
AID APPROPRIATED TOTAL						
GRANT:	430	70	500	840	140	980
LOAN:	1,000	268	1,268	3,644	6,356	10,000
OTHER U.S. 1						
OTHER U.S. 2						
HOST COUNTRY						
OTHER DONOR(S)						
TOTALS	1,430	338	1,768	4,484	6,496	10,980

11. PROPOSED BUDGET APPROPRIATED FUNDS (\$000)									
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY <u>77</u>		H. 2ND FY <u>78</u>		K. 3RD FY <u>79</u>	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	I. GRANT	J. LOAN	L. GRANT	M. LOAN
(1) EH	600	600	600	500	10,000	280		200	
(2)									
(3)									
(4)									
TOTALS				500	10,000	280		200	

A. APPROPRIATION	N. 4TH FY _____		O. 5TH FY _____		LIFE OF PROJECT		12. IN-DEPTH EVALUATION SCHEDULED
	D. GRANT	P. LOAN	R. GRANT	S. LOAN	T. GRANT	U. LOAN	
(1) EH					980	10,000	<div style="border: 1px solid black; padding: 5px; display: inline-block;">           MM YY            03 78         </div>
(2)							
(3)							
(4)							
TOTALS					980	10,000	

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

1      1 = NO  
          2 = YES

14. ORIGINATING OFFICE CLEARANCE SIGNATURE	15. DATE DOCUMENT RECEIVED IN AID/W. OR FOR AID/W DOCUMENTS. DATE OF DISTRIBUTION  <div style="border: 1px solid black; padding: 2px; display: inline-block;">           MM DD YY            03 10 77         </div>
TITLE <b>Director USAID/Nicaragua</b> DATE SIGNED <div style="border: 1px solid black; padding: 2px; display: inline-block;">           MM DD YY            03 08 77         </div>	

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PROJECT PAPER

NICARAGUA - RURAL EDUCATION DEVELOPMENT PROGRAM

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(i)

PART I - PROGRAM SUMMARY AND RECOMMENDATIONS

A. Face Sheet Data. See the preceding face sheets for summary of fiscal data and project purpose.

B. Recommendations. The Mission recommends authorization of the stated financing for a rural education program to be carried out by the Government of Nicaragua (GON).

1. Project Authorization. \$10,980,000. The grant portion (\$980,000) will be funded by allotments from FYs - 1977, 1978 and 1979. It is expected that the majority of costs to be grant-financed will be foreign exchange costs. The loan portion (\$10,000,000) will carry recommended terms of repayment within 30 years, including a ten year grace period with an interest rate of 2% per annum during the grace period and 3% thereafter. It is expected that the majority (\$6.4 million) of the costs to be loan-financed will be local currency costs, with the remainder to be financed as foreign exchange costs. The Nicaraguan unit of currency is the Cordoba (C\$) and the rate of exchange is C\$7. = U.S.\$1.00.

2. Terms and Conditions. The project funding will be subject to the terms and conditions specified in the draft Project Authorization (Annex D).

C. Borrower/Grantee. The borrower/grantee will be the GON. Representing the GON and administering the loan-grant program will be the Ministry of Public Education (MPE).

D. Description of the Program.

1. Strategy for Integrated Rural Development. The Rural Education Program described in this paper represents the third phase of A.I.D. support for the Nicaraguan strategy of integrated rural development. The strategy is to conduct multi-sectoral programs simultaneously within designated rural areas, providing the resident rural poor with expanded development resources and services and a full range of opportunities for improving their lives and modernizing their outlooks, thereby making it possible to break the cycle of poverty. A.I.D. support of this innovative

strategy began in mid-1975 with authorization of the Rural Development Sector Loan No. 524-T-031 that has helped create the GON's new rural development institution, the Instituto de Bienestar Campesino (INVIERNO). INVIERNO's income-raising operations in the target areas are now well underway and the first annual evaluation, conducted in the fall of 1976, showed the program to be meeting or exceeding its interim targets. The second rural program, Rural Health Services, began in mid-1976. By extending, improving, and integrating rural health coverage in the target areas, the Ministry of Health (MOH) intends to achieve a substantial decline in the rates of morbidity and mortality that plague the rural poor. Based on experiences gained in these two programs, complementary efforts under the rural education programs are thus judged to be especially feasible. They will coincide with INVIERNO and MOH operations, both geographically and in the use of community participation mechanisms. It is planned that further programs in municipal development and nutrition will also coincide with and support these sector programs.

2. Program Goal and Purpose

a. Goal. The socio-economic goal of the overall program is to ~~increase~~ the well-being of Nicaragua's rural poor. Intermediate to that goal is the sector goal of expanding and improving rural education in Regions II and V of Nicaragua.

b. Purpose. The purpose of the rural education program is to extend, improve and integrate rural educational services in the target area. Programs are designed so the rural population will receive a greater number of relevant educational services in an improved learning environment using cost effective approaches.

3. Program Components

a. Component One, Administrative Reform and Management Improvement. This component of the program is designed to strengthen the institutional and management capacities of the Ministry of Public Education (MPE) in the areas of planning, organization, staffing, coordination, operations and budgeting. While addressing many of the MPE weaknesses identified in the 1975 Education Sector Assessment, through providing extensive technical assistance to the new Minister and her reform team, this component will also provide critical and strategic support to the other components of the program.

This component will include an estimated 93 person months of grant funded technical assistance services at a cost of \$465,000. Two special studies will be carried out during the initial stages of this component at a cost of \$100,000,

(iii)

also under grant funding. Both long and short-term training opportunities will be made available to MPE personnel. Training costs are estimated at \$240,000 of which \$130,000 will be grant funded and \$110,000 loan funded. Limited commodities and computer costs will be loan financed (estimated at \$175,000) in order to make the technical assistance and training more effective and to strengthen the MPE's capability to carry out needed institutional changes. The GON will provide \$775,000 of counterpart to this component.

Justification for Use of Grant Financing. Elements of the program to be grant funded have been selected for the following reasons:

(1). Enhanced Acceptability of Potentially Controversial Program: The Administrative Reform and Management Improvement is considered by the GON and the USAID to be a program that will disturb the traditional MPE operating procedures and policies. It is understood that the misgivings of the more traditional elements in the Ministry could well jeopardize the reform program. Nevertheless, substantial changes must be made in the day-to-day operations of the Ministry if it hopes to manage its existing and new rural and urban education programs successfully.

(2). Timing: The prompt beginning of key programs under this component is a necessary condition to subsequent activities. Management skills must be developed early if resource inputs are to achieve maximum impact.

(3). Evaluation: The MPE will actively participate in evaluations of program activities. Grant funds will be made available in this grant/loan project in order to strengthen the MPE's capacity to carry out acceptable evaluations of the program components as they are implemented.

b. Component Two, Integrated Community Development. Component Two is designed to develop community capacity to take an active part in determining the nature of the educational services that are delivered to their communities. Local school committees (LSCs) will be formed in the rural areas of Regions II and V. The LSCs will be the mechanism through which the community will communicate with MPE personnel, establish cooperating links with other communities, identify the educational needs of their area, monitor educational progress, and otherwise support local school activities.

The MPE will coordinate its community development activities with the on-going community development programs of INVIERNO and MOH. MPE teachers

and supervisors (trained in Component Four) will serve as community promoters, back-stopped by four specialized MPE promoters who will be stationed in Regions II and V.

A.I.D. loan and grant funds of \$212,000 will be combined with GON counterpart funds of \$361,000 for a total of \$573,000. Some \$120,000 of the A.I.D. grant will finance essential technical assistance for developing the community development capability within the MPE. \$92,000 of loan funds will finance the vehicles to provide the MPE personnel with adequate mobility to carry out their community activities. The GON will finance increased personnel costs estimated at \$206,000 over the life of the loan. Operating costs, estimated at \$155,000 will be covered by the GON for items such as office supplies, promotional materials, vehicle maintenance, etc.

The major expected outputs of Component Two will be: (1) trained central office staff within the MPE which will efficiently support the community development efforts in the field; (2) four MPE promoters who will coordinate their activities with INVIERNO and MOH personnel in addition to supporting the community development activities of the MPE supervisors and teachers. The end of component status will be effective local school committees which are actively promoting demand for and utilization of skills and knowledge.

c. Component Three, Curriculum Development and Related Materials Production. Component Three will develop a radio-supported basic education curriculum that meets the needs of rural primary school age children plus adolescents and adults who lack numeracy and literacy skills. The present curriculum content bears little relationship to the experience of rural children or their parents. The revised curriculum will be adapted for radio and tailored to reflect the realities in the rural areas. Curriculum development for this project will be concentrated on reading, health/nutrition and agriculture. The math curriculum is already being developed by the MPE/Stanford University radio-mathematics project, which will thus serve as a pilot for our broader range of subjects. The MPE staff will also adapt for radio the basic curriculum for social studies (e.g. culture/history).

A.I.D. funds will finance 25 person/years of technical assistance to assist the MPE in developing and implementing the adapted basic education curriculum. The estimated cost of this technical assistance is \$1,740,000, of which \$90,000 for the key evaluation program will be grant funded, while the remainder is to be financed under the loan. Teacher guides, student worksheets and curriculum tapes for radio

broadcast will be produced under this component. A.I.D. will finance these educational materials on a decreasing basis over the life of the project. A.I.D. loan funds of approximately \$1,739,000 will pay for roughly half of such materials.

The GON will finance all operating costs of the curriculum development program. Forty-four MPE employees will be working with technical advisors in adapting the existing curriculum for radio broadcast. Fifteen of these individuals are presently employed under the Stanford radio math project. It is estimated that MPE personnel costs over the life of the loan will be \$1,584,000. Office supplies and office materials are estimated at \$192,000. The GON will also finance the production of teacher guides, student worksheets and curriculum tapes on an increasing basis over the life of the project. The GON will finance \$1,685,000 of these curriculum materials.

The major outputs of this component will be: (1) the revision of the present primary curriculum and the preparation of radio broadcasts, teacher guides, and student materials; (2) the development of an adult education curriculum directly related to the job skill needs of rural adolescents and adults; and (3) the development of the training curriculum for supervisors and master teachers, traditional teachers and Comarca community teachers, and teachers of adolescents and adults. The end of component status for the development of primary curriculum will be the use of radio-supported curriculum and educational materials in over 1,400 primary schools in Regions II and V. For output number two, the adolescent/adult basic education curriculum will be in use through radio broadcasts, radio forums, cassette tape lessons, educational materials, and EAC/CFER schools. Approximately 2,200 education system personnel will be trained in the field to use the primary and adolescent/adult curriculums.

d. Component Four: Training for Supervision and Teaching. The project activity proposes to meet the need for well-trained, committed teachers in rural areas through a continuing program of pre-service and in-service orientation and training for supervisors, master teachers, regular teachers, and Comarca community teachers who will work and teach in the rural areas of Regions II and V. Teaching personnel from the rural adolescent training centers, EACs and CFERs, and other teachers who will be using the accelerated basic education radio-supported adolescent/adult curriculum will also receive training on the content and teaching methodology of the adapted curriculum.

In the initial stages of the project, personnel will be drawn primarily from the present pool of primary teachers. However, as the number of schools in the

program expands, new teachers will be added to the system. Teaching personnel from the four normal schools operating in Regions V and II, and the universities will participate in a series of orientation and curriculum workshops. This project also proposes to make use of both the physical facilities of the National Education Center (NEC) and the teacher training curriculum the Center is presently preparing under the World Bank Loan. The 24 trainers who will have the major responsibility for carrying out in-service training activities under this project will be considered part of the NEC staff.

The A.I.D. loan will finance 72 person/months of technical advisors who will work with MPE personnel to develop and carry out a training program in the areas of community development, multi-grade teaching, radio-supported teaching methods, and adult education. The estimated cost of this technical assistance is \$360,000. In addition, some \$42,000 of the loan will finance the purchase of training supplies such as video tape recording equipment and tapes.

The GON will finance per diem costs for in-service and pre-service training of MPE personnel. In addition, the per diem expenses for the training teams will be financed by the GON. The salaries of the teachers while they are in training and the salaries of the trainers are also calculated as counterpart. The GON will finance these operating expenses which amount to \$1,770,000.

Major component outputs will be: (1) a trained cadre of 24 teacher trainers and 100 supervisors who can carry out the necessary orientation and training or re-training of 2,200 rural education personnel; (2) one hundred master teachers, 1,477 regular teachers and 400 Comarca teachers trained to teach more effectively with the new adapted radio-supported curriculum; (3) the preparation of teachers for the adult accelerated basic education program; and (4) a trained normal school staff capable of providing pre-service training in the skills and knowledge required by the restructured primary system and the rural primary curriculum adapted for radio presentation.

The training component of this program will have the following measurements of end of component status:

- 1) A trained cadre of teacher trainers conducting teacher training workshops in Regions II and V.

- 2) Supervisors actively assisting with teacher training, administering the restructured primary schools in their departments, and providing in-service support for education teachers.
- 3) Master teachers in the Comarca School Circuits providing assistance and guidance to community teachers as planned.
- 4) Regular and Comarca community teachers functioning at an improved level in rural schools.
- 5) Teachers conducting accelerated basic education classes for adults and adolescents in rural schools and in both the EACs and CFER centers.
- 6) Normal school staff members teaching the new radio-supported curriculum to their normal school classes.

e . Component Five, Strengthening Rural Education Delivery Systems. Component Five is designed to address the infrastructure, support and service constraints that hinder the delivery of rural educational services. This Component complements the activities of the three preceding components. All construction and repair under this Component will be contracted out to local contractors and A&E firms. The following activities will take place under this Component.

1) Activity A -- Comarca School Circuits. One hundred Comarca School Circuits (400 classrooms) will be established and staffed in the rural areas of Regions II and V where there are no educational services at the present time. The Local School Committees in a designated area will request that a Comarca School Circuit (CSC) be formed in their area. The MPE will act upon the request by constructing the appropriate number of classrooms (average four to a CSC) and a home for the Master Teacher. The individual communities will choose a local person to be their Comarca Community Teacher whose activities they will monitor.

The A.I.D. loan will finance 70% of the estimated \$3.2 million CSC construction costs, or \$2,240,000. The GON in turn will finance 30% of such costs or \$960,000. In addition, the GON will pay all salaries for the 400 new Comarca Community Teachers and 100 new Master Teachers. These personnel costs are estimated at \$975,000 over the life of the loan. The community will provide the land for the school. The end of activity status will be 20,000 students including

children, adolescents and adults, in Regions II and V receiving an education, whereas previous to this project educational services were not available to them due to the fact that they lived in isolated communities.

2) Activity B - Improving Existing Rural Primary Schools. Approximately 50% of the rural primary classrooms in Regions II and V are in need of repair. Some schools are closed because they are a hazard to students while other classrooms provide a poor learning environment due to less serious structural deficiencies.

A.I.D. loan funds of up to \$1,188,000 will finance 70% of the estimated costs for the repair and reconstruction of 530 existing rural primary schools. The GON will provide 30% of these repair and reconstruction costs or \$508,000. The GON will also finance 140 new teachers for schools that are now closed due to structural problems. This upgrading program will provide a more congenial learning environment where the local teacher can present educational material to young and not-so-young alike.

3) Activity C - Furnishing New and Existing Schools. This activity will address the problem of deficient school furniture in Regions II and V. In addition, furniture will be supplied to the new 400 Comarca classrooms. Three hundred and sixty (360) classrooms, which are without furniture at the present time, will be furnished. Seven hundred and sixty-one classrooms where furnishing are 50% incomplete will be provided the furniture they lack. A.I.D. will finance the purchase of all furniture at an estimated cost of \$398,000. An improved learning environment is the goal of this activity.

4) Activity D - Continuing School Maintenance. This activity is designed to institutionalize a building maintenance program for the primary schools in Regions II and V. With the assistance of a technical advisor under the first component of this project, the MPE will design and implement a maintenance plan which will furnish financial assistance to the Local School Committees for repair and maintenance of the schools under their jurisdiction.

The GON will finance the entire continuing maintenance program and covenant to keep it in operation even after project termination. It is estimated that the plan will cost \$955,000 over the life of this project. The end of activity status will be an increased number of continuously well-maintained primary schools in Regions II and V.

5) Activity E - Education Support and Service. Activity E first addresses the constraint of inadequate educational support for rural primary schools from MPE supervisors and central office staff. Supervisors cannot reach many of the isolated communities because they lack adequate transportation while central office personnel often have an urban orientation because they do not have access to the countryside. Four-wheel drive vehicles will be provided to both supervisors and central office staff to be used on a shared basis.

An important subject in the new curriculum is health and nutrition which will be taught in part through practical classroom experience working in the school gardens. This activity will also supply the garden kits to each Local School Committee upon request. These kits will have the necessary garden implements such as shovels, hoes, machetes, rakes, etc.

The A.I.D. loan will finance the school garden kits and vehicles. These two items have an estimated cost of \$475,000. The GON's financial responsibility under this activity will be to provide for the maintenance and fuel for the vehicles and pay the salaries of the 32 new supervisors that will be hired over the first three years of the project. These GON operating costs are estimated at \$1,042,000. The end of activity status will see a greater number of supervisors and Managua-based MPE staff assisting in the rural areas, and school gardens established in rural communities to serve as a learning mechanism for all its citizens.

6) Activity F - Rural Adolescent Centers (RAC). The Rural Family Educational Centers (CFER) and the Campesino Agricultural Schools (EAC) have been a major positive educational force in the rural areas. This activity will address the need to increase adolescent (ages 14-20) literacy, numeracy, and occupational skills, in the rural areas. The MPE is proposing that the present system of rural adolescent centers be expanded which, in turn, will complement the basic primary education program as the Rural Adolescent Centers provide an opportunity to supplement their education for graduates of primary school. The RAC curriculum concentrates on six major subject areas: (1) Agriculture, (2) Rural Marketable Skills, (3) Home Economics, (4) Community Organization, (5) Basic Education and (6) Health Education.

The A.I.D. loan will finance 70% of the costs of constructing six (6) CFERs and six (6) EACs. A.I.D. will finance \$756,000 in construction costs.

In addition, A.I.D. loan funds will be used to purchase \$189,000 worth of equipment and furnishings for these centers. The GON will finance 30% of all construction costs or an estimated \$324,000. The GON will also pay the costs of operating the centers which will cost \$954,000 over the life of the project. Through this activity a larger number of rural adolescents will have greater access to skills and knowledge relevant to their daily lives.

7) Activity G - Radio Transmitting and Receiving Capability. In order to broadcast the radio-supported curriculum efficiently in Regions II and V, the GON will install two 20KW radio stations, one in Jinotega (Region V) and the other in Masaya (Region II). These radio stations will be operated by MPE personnel with the prime responsibility of broadcasting the curriculum for primary school children, and for adolescents and adults taking the accelerated basic education courses. Radio/recorders will be provided to each school and RAC.

The A.I.D. loan will finance all of the equipment for the radio stations and the radio/recorders for the schools. Total equipment costs are estimated at \$610,000. The GON will construct the two radio stations on GON-owned land at a cost of \$80,000. In addition, the GON will finance the costs of operating the stations over the life of the project. These operating costs are estimated at \$927,000. The radio stations will become a focal point for the GON's integrated rural development strategy, providing the rural poor with skills and knowledge relevant to improving their living environment.

#### 4. Financial Plan of Program

Based upon the above described Components, it is expected that A.I.D. grant and loan funds and GON counterpart resources will be allocated to the sector program approximately as follows:

SOURCES OF FUNDS

(In U.S.\$ 000s)

<u>Uses of Funds</u>	<u>A.I.D.</u>		<u>GON</u>	<u>TOTAL</u>
	<u>Loan</u>	<u>Grant</u>		
Component One: Administrative Reform and Management Improvement	<u>210</u>	<u>770</u>	<u>775</u>	<u>1,755</u>
Component Two: Integrated Community Development	<u>92</u>	<u>120</u>	<u>361</u>	<u>573</u>
Component Three: Curriculum Development and Related Materials Production	<u>3,440</u>	<u>90</u>	<u>3,432</u>	<u>6,962</u>
Component Four: Training for Supervision and Teaching	<u>402</u>		<u>1,770</u>	<u>2,172</u>
Component Five:				
A. Comarca School Circuits	<u>2,240</u>		<u>1,935</u>	<u>4,175</u>
B. Improving Existing Rural Primary Schools	<u>1,188</u>		<u>1,354</u>	<u>2,542</u>
C. Furnishing New and Existing Primary Schools	<u>398</u>		<u>-</u>	<u>398</u>
D. Ongoing School Maintenance	<u>-</u>		<u>955</u>	<u>955</u>
E. Ed. Support & Services	<u>475</u>		<u>1,042</u>	<u>1,517</u>
F. Rural Adolescent Centers	<u>945</u>		<u>1,278</u>	<u>2,223</u>
G. Radio Transmitting and Receiving Capability	<u>610</u>		<u>1,007</u>	<u>1,617</u>
Sub-Total:	<u>5,856</u>		<u>7,571</u>	<u>13,427</u>
A.I.D. Grant Total:		<u>980</u>		<u>980</u>
A.I.D. Loan Total:	<u>10,000</u>			<u>10,000</u>
GON Total:			<u>13,134</u>	<u>13,134</u>
PROJECT GRAND TOTAL:		<u>10,980</u>	<u>13,909</u>	<u>24,889</u>

E. Summary Findings

The rural education development program as presented in this grant/loan project is feasible and ready for implementation. Technologies to be utilized are appropriate to the Nicaraguan situation and have been found to be cost effective in Nicaragua. Program cost estimates are firm. They are based on current market conditions and include contingencies for price increases. Recurring costs that are estimated to result from the program have been accepted by the GON as being necessary, proper and sustainable.

The program meets all applicable statutory criteria. Annexes B and C include the Checklist of Statutory Criteria and the Mission Director's 611 Certification.

F. Program Issues

General issues related to this program concern the ability of GON personnel to manage and evaluate the program, and the scope of activities to be developed over the five year period of the project. The managerial concern is addressed by the first Component and is the subject of Conditions Precedent to Loan Disbursements as outlined in the draft loan authorization contained in Annex D and in Part V of the paper.

Finally, detailed technical and operational question are fully treated in Parts III and IV of the paper.

G. USAID Program Committee

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James Turman	Education Advisor
Ann Domidion	Educational Materials Advisor
James W. Habron	Engineer
Richard Sleep	Financial Analyst
Marvin Schwartz	Program Economist
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## PART II - BACKGROUND AND PROJECT SETTING

### A. Rural Development Sector Strategy

Since completion of the Nicaraguan Agriculture Sector Assessment, it has become increasingly clear that development of the agriculture sector, which is a basic goal of the GON's agricultural sector policy, is a function of a longer infinitely more complex process of rural development. Vast potential for agricultural development exists in Nicaragua. An agricultural frontier on the Atlantic Coast covering an area over 61,000 square kilometers (larger than the remainder of the country) is virtually unfarmed, not to mention the improvement in yields which could be obtained through more modern cultural practices. However, converting this potential into a developed agricultural sector requires more than a focus on farm land; it also requires larger and more effective investments in people. Thus, Rural Development has become the key strategy for implementing the GON's Agriculture Sector Policy.

The first objective of this policy is to "improve the standard of living of the rural population through greater access of the population to the flow of goods and services and through increasing the participation of rural inhabitants in decisions which affect their well being". In a larger sense therefore, the GON's Rural Development Sector Strategy involves a major effort to restructure all pertinent public sector policies, institutions and activities so that these become more aggressively responsive to the needs of the people, especially the rural poor. Stated in another way, the results of the GON's rural development strategy should be measurable in terms of better education, improved health and nutrition, better clothing and more adequate shelter, as well as in terms of additional production, higher yields, increased farm incomes, more foreign exchange earnings, and larger contributions of the agricultural sector to the total economy.

#### 1. Framework of the Strategy

Three intrinsic constraints conditioned the design of the rural development strategy. One is the dispersion of the rural poor. Nicaragua has the largest land area (46,000 sq. miles) in Central America; it also has the lowest population to land ratio (33 per square mile). The second constraint is economic. The financial resources required to reach massive members of rural poor over widely

dispersed areas are simply unavailable. Finally, and most importantly is the unfor-  
giving complexity of the nature of poverty and therefore the design of effective  
programs to help the poor.

In recognition of the above, the GON postulated the following de-  
velopment premises:

- a. It is held that poverty is caused both by a lack of financial means and a set of conditions including, but not limited to deficient education, inadequate nutrition, high morbidity, and inadequate shelter.
- b. Given the economic constraints and the complexity of the problem, programs designed to attack poverty must be integrated and complementary in such a way that the outputs of one become inputs for another. It follows that programs designed for short term impact must be valid in the long term.
- c. In view of the dispersion of the rural population, program resources should be concentrated first in Regions V and II successively. These two regions contain almost 60% of the target population and are endowed with abundant natural resources.

## 2. The Integrated Strategy

The GON's strategy is to extend integrated, bureaucratically stream-  
lined systems for the delivery of credit, education, health and nutrition services and  
better rural municipal government to the rural poor in selected regions until members  
of the target group have the means and conditions necessary to help themselves up  
from poverty to progressively higher levels of well being.

The first move in the strategy called for the restructuring of the pub-  
lic agricultural sector so that it can respond more effectively to the problems of the  
agriculture sector in general and the rural poor in particular. The Ministry of Agri-  
culture's long suit has been in operational programs and services, but none of these

contain the properties needed to reach the rural poor. Its short suit has been in planning, a facility urgently needed to develop studies, prepare project design and evaluate rural development programs. The Ministry proceeded, therefore, to strengthen its planning capabilities with the formation of DIPSA and to create new autonomous "Institutes" to carry on its operational responsibilities with greater independence and flexibility.

The Institute of Campesino Welfare (INVIERNO), was the first of the new operational entities created by the Ministry. INVIERNO's prime responsibility is to improve the lives of the rural poor. To achieve its mandate, INVIERNO may provide any type service necessary or contract for the provision of services with other entities in public or private sectors. To start with, INVIERNO adopted a strategy to gain the confidence of the campesinos by helping to increase net disposable incomes. To implement its strategy, INVIERNO organized a banking service to provide credit to poor rural farmers. The banking facility is organized for people and not for profit. Its clients become "members" of INVIERNO and continue as such until they have "graduated". A flexible repayment system is available so that bad seasons will not further impoverish INVIERNO's members. Moreover, INVIERNO purchases agricultural inputs in quantity, and has organized its own distribution system to assure that economies of scale are passed on to the rural poor. In this first year of operations INVIERNO made over 6,500 loans to poor farmers in Region V.

These outputs were achieved in large measure by a cadre of 44 Agricultural Generalists<sup>1/</sup> called Agromocs who were employed by INVIERNO to motivate, organize, and train poor farmers. The Agromocs entered approximately 164 communities, organized an equal number of community agricultural committees, enlisted 4,500 poor farmers as members of INVIERNO and helped provide them adult education in cultural practices and marketing techniques. During the same period, INVIERNO arranged to provide preventive health care through the Ministry of Health (MOH) and contracted with the Ministry of Public Works to implement a rural road improvement program in Region V.

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<sup>1/</sup> There are presently 90 Agromocs employed by INVIERNO in approximately 200 communities.

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The second major ingredient being folded into the overall strategy is a rural health program, which was designed to begin implementation during the second and third years of the program in Regions V and II. The purpose of this program is to extend, improve and integrate health services for the rural poor. The MOH, which has had previous experience in community development, is training health promoters to work with the campesinos in rural communities. These promoters, working with INVIERNO's Agromocs, will form health committees, in many cases from members of the agricultural committees. The committees in turn will encourage the campesinos to take advantage of health services, training, etc. Included will be efforts to: provide basic health education; deliver basic environmental sanitation services (potable water and latrines); and strengthen the rural health referral system. In this way, rural health activities will build on the efforts of INVIERNO and the Agromocs in rural community development to assure that benefits of the health program are efficiently and effectively delivered to the rural areas.

The third major facet of the Rural Development Strategy is the more difficult program of educating the target population. The purpose of the program is to develop or improve educational programs for rural adults, adolescents and children. Directed to the Regions V and II, this program will strengthen existing schools, develop more relevant curricula, teaching and learning materials for adolescent and primary school systems and organize adult education courses. Following the lead of INVIERNO and the MOH, the Ministry of Education will employ a teacher's aide to work in each of the rural communities. By the time these aides are in the rural areas, most communities will have active agriculture and health committees. Thus the organization of education committees, which will have more responsibility than other committees, should be less difficult. Their task will be to feed back ideas into the curricula development process, monitor the new education program materials, organize construction and maintenance of school facilities, and encourage community participation in the education programs.

The Agromocs and the Health promoters will also play a major role in the education program. Both will assist in the preparation of adult education programs, both could be used as guest teachers, and both should be important sources for the articulation of new ideas for curricula development. In addition, the warehousing and distribution system initiated by INVIERNO will be used in the early years of the program for the distribution of educational materials. The Education

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program, scheduled to begin in mid 1977, is designed to fully capitalize on the slowly expanding horizons which are developing among the rural poor as a result of the INVIERNO and MOH efforts.

A fifth and follow-on contribution to the Rural Development Strategy is a multi-sectoral nutrition program. Based upon a newly established national food and nutrition planning mechanism, this program will, in part, help to: upgrade, through a variety of educational means, the food habits of rural dwellers; increase the availability of food for their consumption; and improve through health-related measures, the biological efficiency with which food is utilized by the target population.

The sixth component of the Rural Development Strategy is a Rural Municipal Development program. This component is designed to improve services of rural municipalities to their rural constituencies. It will include a credit fund to finance projects such as better marketing facilities, slaughter houses, grain storage facilities, etc. The program will also provide training and technical assistance to improve the administration of the municipios (county seats of government). In time, the municipal government may become responsible for maintenance of physical facilities such as rural schools and health facilities, and may take over the distribution of school materials from INVIERNO. Further, the municipios may provide campesino legal aid in licensing small farmer business enterprises, property assessment, title clearances and other land purchases or rentals transacted by the rural constituents. It is expected that this program will benefit by added revenues generated by the overall Rural Development Program. More importantly, the experience in civic affairs gained by the agricultural, health, and education committees will tend to assure that municipal government becomes more representative of and responsive to needs of its constituency.

By the time the Rural Municipal Development program is in place, INVIERNO will initiate delivery of a second set of services. Scheduled for implementation in the fourth year of the integrated program, this set of services will be designed to channel the additional incomes of the rural poor into new equitable investments. The strategy will be to capture some of the additional income earned by the rural poor through the production credit programs and parlay these into investments in home improvements, small farm enterprises, and land purchases. INVIERNO will make new lines of credit available to the rural poor to facilitate this process. At this point too, INVIERNO will begin divestiture of some of its input supply and distribution facilities. These facilities will become small farm enterprises which are owned and managed by INVIERNO members (socios).

The most crucial test of the GON strategy will occur during this phase of the program. If the health and nutrition interventions have not decreased morbidity, or if the education program has not provided relevant new learning experiences or expanded the horizons of the poor and if the campesinos lack confidence in the will and ability of rural municipal governments to protect their interests, it is

unlikely that the target group would willingly risk investing its small additional income to achieve higher levels of well being. This is the point in the GON's strategy at which all component should converge to help lift the rural poor to a higher set of living conditions and economic well being. If the strategy succeeds, INVIERNO overtime, will be in a position to organize its withdrawal from some of the target areas in Region V.

### 3. Replication

There are no certain fail safe mechanisms to insure the success of these efforts. Frequent evaluation and many tactical corrections are foreseen in the execution of the GON's complex but innovative Rural Development Strategy. But if it is successful, the all too impervious circle of poverty will be replaced by continuous improvements in the quality of life for the rural poor. Certainly the campesinos should benefit from increasing access to the flow of goods and services and from their greater participation in decision making process. But in the longer term, there should be measurable improvements in the health, and education as well as in the housing, clothing and home conditions of the target population. And if in the medium term, there are measurable increases in the levels of productivity, income and employment as there should be, the GON plans to replicate the strategy in other regions.

### 4. Priority

The GON's Rural Development program is fully consistent with the U. S. Congressional Mandate and has been actively supported by USAID in its design and in part of its implementation. Additional technical assistance and financial support are required and project papers are in various stages of preparation for Education, Nutrition, Rural Municipal Development and the INVIERNO II Program.

### B. Educational System Constraints

The attainment of goals and objectives for integrated rural development in particular, and those of national development in general, are dependent on many variables. An efficient educational system is a key variable in determining the success or failure of any economic development program. Relevant knowledge and skills must be transmitted to those people who are the program beneficiaries of the development program.

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There is general agreement that little more than half of the total population of Nicaragua is literate, indicating a lack of efficient and effective delivery systems of basic education for large segments of the people. The present system has not extended equitable access to education to all the population. The scarcely populated rural areas have traditionally enjoyed fewer benefits in education than those in the more densely populated urban and urban fringe areas.

Likewise, the available statistics support the perception that the rural areas face the most pressing educational needs. In 1974, it was estimated that 70 percent of the rural population was illiterate as compared to 25 percent of the urban population. In rural areas only 82 out of every 1,000 entrants into grade one complete grade four, and only 53 of 1,000 entrants complete grade six. In urban areas, 440 out of every 1,000 students who enter grade one complete grade six. These statistics clearly indicate the inability of the present system to cope with the pressing needs for education in rural areas at a level remotely equitable with the needs of the students in urban areas.

One of the causes for these disparities is financial in nature. It has been estimated that only 27% of GON expenditures for primary education are directed to the rural areas, although these areas contain 54% of the primary school age population. Another cause is the poor quality of educational services provided to the rural areas. Unmotivated teachers and inadequate curriculum further diminishes the educational value of available financial resources. Approximately 60% of all students in rural areas dropout after or during the first grade. As a result of the juxtaposition of these two factors dropout costs during the first three grades of rural primary schools in Nicaragua account for approximately 68% of the national budgetary resources allocated to rural education. The foregoing inefficiencies in the current educational system directly affect the GON's ability to achieve its national development goals.

Another source of these problems flows from a series of internal constraints in the Ministry of Public Education (MPE) that limit the outreach and quality of educational services provided. These include (1) an inefficient central organization and administration, (2) low levels of access to rural primary education, (3) poor utilization of existing facilities and lack of school maintenance, (4) absence of coordination between curriculum development and human resource development needs for trained manpower, (5) inadequately trained and poorly supervised rural primary school teachers, and (6) the lack of a cost-effective educational delivery system that

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can reach isolated rural populations with integrated learning packages that are meaningful to their real life experiences, and useful in their daily lives.

An analysis of specific internal constraints must begin with a consideration of the structure of the MPE and the operational procedures which it follows. The MPE has traditionally been highly centralized, with final authority for even minor decisions vested in the Minister who in turn delegates areas of responsibility to subordinates, without relinquishing the right to make final and vital decisions. Since there is neither civil service, nor tenure, the authority of the Minister, and of each succeeding level of administration, is awesome and occasionally threatening. Furthermore, since all MPE positions, including supervisors and teachers, are essentially appointive in nature, controls over appointments are difficult to exercise, job definitions remain vague, and the possibility that unqualified persons may get and keep jobs remains real.

Under these circumstances, job security and professional advancement are heavily dependent on maintaining the good will of immediate superiors, a condition which does not encourage risk taking, innovation, or change. They lead also to the establishment of hegemonies resistant to effective integration with the general strategy of the Ministry and with tendencies toward isolation, autonomy and empire-building. By-products of this kind of atomization have been inefficient utilization of resources, duplication of effort and communications breakdowns.

A second major constraint relates to the factual bases for decision-making and determination of objectives within the MPE. Despite improvements in statistical analysis, data of the kind and quality needed for important decisions often are not developed, nor is the interpretation of such data as do exist carried out at a very advanced level.

The Education Sector Assessment identified the following additional major internal constraints that must be addressed by the MPE if it plans to carry out the series of innovations and improvements that are required within the context of the national rural development strategies.

Educational Planning. Lacking specialized personnel, goal oriented procedures, and clearly defined lines of communication and responsibilities, the Office of Planning can be expected to confront major problems. In its present physical,

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organizational, and staffing configuration, this office has limited capability to carry out major responsibilities in new educational programming in addition to normal operational demands of the national system of education.

Inter-Agency Coordination/Cooperation. To date, few efforts have been made to coordinate educational programs with programs being planned and carried out by other ministries or other institutions, agencies and private groups. The tradition has been to operate in isolation.

Teacher Benefits and Incentives. With special reference to rural areas, it still remains very difficult to attract qualified teachers, i.e., trained normal school graduates, to the more isolated schools because of transportation problems, lack of varied and nutritionally adequate food supply, lack of medical and dental facilities, etc. These deficiencies are very common in the isolated rural areas, and in the absence of incentives for teachers to work in those areas, they will continue to handicap the improvement of rural education.

Pupil/Personnel Accounting. Since the establishment of the Personnel Office within the Ministry only a few years ago, there has been significant improvement in personnel accounting practices. Lack of up-to-date data on many teachers, however, is still a problem, especially for rural teachers. There has never been a good pupil accounting system set up within the MPE. No data exist on attendance, whether individual or average daily attendance at schools, student attrition rates during the school year, etc. The possibility exists that much student data should not be centralized, but that it might best be maintained at the School/Regional Supervision levels. However, in most cases, forms, equipment, and process knowledge of how to do this are seriously lacking.

Educational Supervision. The appropriate and effective functioning of supervision services, especially at the primary education level, is of pivotal importance in bringing about needed educational reforms. There currently is no other vehicle available for the rapid upgrading of teaching personnel or for making the investigations and reporting data prerequisite to effective program planning and evaluation.

Personnel Capabilities. Within the Nicaraguan public school system, there is a dearth of subject matter expertise and methodological "know-how" at all educational levels. Until most rural teachers are capable of using multi-grade teaching

techniques and until both rural teachers and vocational instructors are sufficiently knowledgeable in their subject matter areas (including, for at least rural teachers, health, nutrition and basic agriculture) neither the needs of the rural poor nor the development needs of the country will be effectively addressed.

Curriculum. Although the MPE has completed a program of primary curriculum reform for grades 1 - 6, and this curriculum is now in use in both urban and rural areas, recent studies have indicated that this curriculum, and its delivery system, do not adequately meet the needs of rural poor populations.

Methodologies/Instructional Systems. The use of outmoded teaching methodology is a continuing problem in the schools, with heavy dependence on the lecture-recitation method. In the absence of library books or other supporting material, teachers are forced to use traditional approaches. Textbooks are provided free of charge at the primary level, but are wearing out and not being replaced, and students at the secondary level have difficulty affording the cost of their books. Audio-visual equipment and material are seldom found, and even paper, pencils, and chalk are in short supply.

Access/Retention Rates. Most urban students at least have access to the first grade, but initial enrollment for children in some rural areas is as low as it is because many rural children lack access. Many students are "pushed out" after one or two grades because there is nowhere to continue their studies, and many rural school-age children drop out during the first grade. Consequently there is a tremendous educational wastage. It is serious enough to warrant the investigation of alternative rural education strategies which would increase both the internal and external efficiency of the system.

Facilities/Maintenance. A major constraint on the educational system is overcrowded classrooms in the cities, at both the primary and secondary levels. Rural facilities have inadequate furniture, with a number of classrooms in need of repair. Unless due note is taken in the MPE of these conditions and funds allotted to improve them, physical facilities will continue to deteriorate, as will the learning environment of the students.

C. National Educational Development Goals and Strategy

Within the context of Nicaragua's overall development strategy, as contained in The National Plan for Reconstruction and Development (1975-1978), four basic goals of the educational sector can be identified:

- a) To increase access to improved educational services.
- b) To repair physical damage to educational facilities caused by the earthquake.
- c) To prepare a work force which can effectively contribute to, and benefit from increased national economic growth and development.
- d) To respond to the distinct educational needs of Nicaragua's poor majority.

To achieve these broad goals, a more discrete national educational strategy has been formulated which seeks to:

- 1) Create a more flexible educational system which is closely tied, and responds to changes occurring in the labor market.
- 2) Reorient curriculum, at both primary and secondary levels, toward more practical pre-vocational training, and away from preparing students only for the next level of academic education.
- 3) Reorient and upgrade pre-service and in-service teacher training programs in order to increasing the quality and relevance of rural education programs.
- 4) Increase opportunities for on-the-job training.
- 5) Introduce work-study programs which will allow lateral re-entry to the classroom after a student completes a period of employment, so as to establish a relevant system of continuing education.

- 6) Increase National Education budget, giving greater emphasis toward increasing the quality and outreach of rural primary education, reducing illiteracy, and producing skilled workers, technicians, and professionals needed to achieve National Development goals.

These modified educational objectives are consistent with A.I.D.'s Educational development strategy and with the Government's National Integrated Rural Development efforts. MPE has recognized the need to act in an integrated manner with other concerned branches of the GON to effect reforms and improvements in education, and more specifically, in rural education, at both the formal and non-formal levels. The MPE is now attempting to design and implement an effective rural educational strategy which can lead to the attainment of educational development goals and objectives. The achievement of rural educational goals will require an integration of MPE's efforts with those of other GON ministries and agencies, and a marshalling of all available resources.

D. General Description of the Nicaraguan Educational System

The Nicaraguan educational system is highly centralized. Almost total control and authority are vested in the Ministry of Public Education, subject to executive approval.

Public education at the primary and secondary levels is mainly planned and managed by the MPE. Vocational, technical and specialized educational programs are partially planned and managed by the MPE. University education is essentially uncoordinated, and independently planned and managed. Private primary and secondary education is hypothetically supervised by the MPE, but in reality is planned, managed and financed independently.

A few specialized schools depend on ministries other than the MPE for support and control. The National Agricultural School is under the Ministry of Agriculture and does not depend upon the MPE for funds or curricula. The Military Academy is under the Ministry of Defense, and the Universidad Nacional Autonoma de Nicaragua (UNAN) receives its funding directly from the general budget. The Universidad de Centro America (UCA) is a private institution, independently managed and coordinated with government planning only to the extent that it must justify its requests for subsidies. The Instituto Centroamericano de Administracion de Empresas (INCAE) as a private institution, is assisted, but in no way controlled, by the GON.

The training of primary and secondary teachers is the responsibility of UNAN, UCA and the five (5) normal schools scattered throughout Nicaragua. The National Education Center, built by USAID under Loan 524-L-027 is currently preparing a new curriculum with technical assistance provided under a World Bank Loan. This Center will be responsible for in-service training of primary and secondary teachers, as well as in-service training for teacher trainers, supervisors and school principals.

### Primary Education

Primary education in Nicaragua consists of six grades and is directed to students, ages seven through twelve. There is a significant proportion of students over twelve but only a few below the age of seven. Within the Public School System are included so called "semi-public" schools in which the teachers are provided and paid by the MPE, but the buildings and facilities are private.

There are approximately 2,300 primary schools in Nicaragua, about 88% of which are public. Only 35% of the classrooms, however, are located in the rural areas. A major reason is the scarcity of teachers in those areas.

The relationships between the number of classrooms available and the total primary school enrollments of 114,568 in the rural areas and 219,095 in the urban areas, result in an average of 52 students per classroom in both urban and rural schools. Such a figure is misleading because it does not reflect the uneven distribution of students in classrooms, with fewer than 15 students in two or more grades in some, and more than 60 in others.

### Secondary Education

Secondary education in Nicaragua consists of two cycles: a three year Basic Cycle and a two - three year Diversified Cycle. The GON has been unable to build secondary schools rapidly enough to keep up with the demand; so that about 38.5% of secondary school students attend parochial and private schools (1973, AED p. 49). Most are enrolled in traditional academic programs but there is a growing emphasis on vocational training.

Although there is a good transfer of students from sixth grade to the Basic Cycle, only 54% of all beginning students obtain a secondary school degree in five

years. As a step toward helping the less qualified or less academically oriented students the GON has introduced vocational/technical training with the aid of other public and private international agencies. The Ministry of Labor, with the support of the ILO and A.I.D., has established the National Apprentice Institute to provide practical training program in manual arts, with a modest amount of academic work, which is relevant to the needs and interests of workers.

The MPE recognizes that strengthening primary and secondary education, along with the introduction of vocational/technical/agricultural training might lead to significant increases in student retention rates, and has obtained financial support under a World Bank loan to expand and improve vocational/technical training programs.

#### Post-Secondary and University Education

Institutions which can be classified in this category are few and extremely varied. With a current enrollment of about 12,000 students, the Universidad Nacional Autonoma de Nicaragua (UNAN) is the largest educational institution in the country. With a minimal tuition of about \$120.00 per year, and a liberal tuition waiver policy, it is over 85 per cent dependent on the GON for funding. It provides ample choices for post-secondary education in thirty-one different fields. Although originally founded in Leon, it conducts many classes in Managua.

The Universidad de Centro America (UCA) is a private, Jesuit-controlled institution with about 2,600 students in regular sessions and several hundred more in short courses and in evening schools. Only sixteen years old, it offers fewer options than UNAN but has a variety of possible career programs.

A third degree-granting institution is the Instituto Centro Americano de Administración de Empresas (INCAE), modeled after the Harvard Business School and largely developed by the Harvard faculty. It serves the Central American business community, offering post-graduate training leading to a Master in Business Administration degree, as well as short courses in special business-related areas.

Another private, post secondary school is the Instituto Politecnico (POLI), which is primarily concerned with the preparation of teachers and practitioners in applied arts, nursing and physical education. Most of the over eight hundred students

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enrolled work during the day; so classes are held in the evenings or during the weekends.

In Granada, located thirty-five miles south of Managua, there is a new government-run technical school, the Instituto Tecnológico de Granada, which is principally committed to the training of middle-level technicians for industry. Finally, there are a few other specialized post-secondary schools located in Managua such as The National School of Nursing and The National Commercial Institute.

#### Non-Formal Education (NFE)

It has become increasingly evident that learning experiences are not limited to formal education systems. In Nicaragua, as well as in other Latin American countries, a significant amount of planned learning, which takes place in a non-formal setting, contributes to the socio-economic development of the country, provides needed job skills, increases opportunities for formal education, and supplies an alternative educational network. In Nicaragua, non-formal educational activities include agricultural extension, farmer training programs, occupational skill training, adult literacy programs, mass media educational projects, and health and nutrition education programs at the community level. The Nicaraguan Education Sector Assessment (p.p. 74-80) provides a description of non-formal educational activities being carried out by both public and private sector entities.

The assessment further states that more direct knowledge relevant to specific job needs is provided by NFE programs than by the formal education system. NFE programs have more direct contact with communities in the rural areas; in addition, they are able to identify specific manpower needs more rapidly. In general terms, NFE programs are able to assist in alleviating human resources shortages more efficiently than formal educational programs.

The communication techniques employed in NFE programs in Nicaragua include short-term courses, meetings, lectures, discussion groups, and personal visits. There is less diffusion of information through audiovisual materials, pamphlets, books, mass media, or posters than is found in other Latin American countries. Little effort has been made to determine which communication techniques would be most effective, and at what level. The change agents use the specific technique with which they are familiar, without concern for its applicability to the content of the message; and yet most results appear to be positive.

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The heaviest concentration of NFE activities is in the Departments of Managua and Matagalpa. There are few NFE programs in Nueva Segovia, Jinotega, Madriz, Rivas, Rio San Juan, Chontales, or Boaco; Zelaya is an exception among the other rural departments, however, because of its isolation and the concerted interest in the area by several different protestant and Catholic groups.

The GON does not provide technical assistance to or cooperate with private NFE groups except in a very few cases. In no case is there financial assistance offered. This is due primarily to the lack of personnel in the Adult Education Division of the MPE and its restricted budget. It has not been possible to determine the impact of NFE on Nicaragua's overall development effort or to assess its effect on production, income, or changed practices.

It is also not possible to measure comparable trends of educational resources for NFE with formal education. Expenditures are not easily obtained, except for a few individual programs, and a portion of the costs are not easily calculated, since they are in the form of contributed services and facilities. General patterns can be found, however. First the formal education system gets most of the total public educational expenditures in both urban and rural areas. Second, there are more resources for urban-oriented programs than for rural oriented programs. Third, it is clear that potential resources for NFE programs in rural areas are underutilized and untapped, especially available physical facilities, expertise of local craftsmen, progressive farmers, and local rural agricultural, health and nutrition specialists.

External assistance for NFE programs has been overshadowed by assistance to formal education programs. This imbalance is compounded by the larger contributions to urban area programs at the expense of those in the rural areas. However, this pattern is slowly changing as organizations such as UNESCO, FAO, the World Bank, and A.I.D. begin to focus more on the rural areas and on NFE.

E. Previous GON/AID Efforts

1. Early Efforts

Previous A.I.D. assistance to the education sector in Nicaragua has been provided through both development loans and grants. A.I.D. supported programs have included projects directed toward university expansion; curriculum experimentation,

revision and reform; acquisition of primary and university level textbooks; development of a national plan for education; construction of rural and urban schools; the preparation of an Education Sector Assessment; and completion of a comprehensive study proposing a new rural education program for Nicaragua.

In accordance with past GON priorities, A.I.D. assistance to education and human resources development has generally been channeled to urban areas and has benefited the urban population, except for a few relatively small projects in rural primary school construction which were initiated during the 1960's. Loan funded assistance has been concentrated mainly within the primary school system. The following are brief, summary descriptions of GON/AID cooperative efforts in education:

#### Grants

1. Primary School Textbooks: In conjunction with the ODECA-ROCAP textbook project which was initiated in 1963 to rewrite and prepare textbooks for all Central American countries, A.I.D. financed the development and the first printing of a new elementary textbook series for grades 1-6. In addition to the development and printing costs, A.I.D. provided funding for the costs of materials, teacher orientation programs, and participant training. These programs continued through 1975. While these efforts made significant progress in meeting needs for instructional materials, recent studies and analyses of the educational system indicate that serious gaps exist in the quantity, quality, and content of textbooks produced under this program.

2. EDUCREDITO: In 1967, USAID provided funds to a student loan program (EDUCREDITO) operated by the National Development Institute (INDE). Approximately \$270,000 was granted to this program through 1972 and over 600 students were able to obtain loans to further their education, to upgrade and/or obtain new skills.

3. The National Plan of Educational Development: With contract technical assistance provided by A.I.D., this plan for the 1971-80 period was completed in late 1971. It in turn, provided the analytic base for the Education Sector Loan 524-L-027.

4. Curriculum Reform: In 1972, the GON completed a program of primary curriculum reform for grades 1-6 with A.I.D. funded technical assistance

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provided under contract with the Southwest Alliance for Latin America (SALA). Although this curriculum is now in use in both urban and rural areas, recent studies have indicated that it, and its delivery system, do not adequately meet the needs of rural poor populations, nor is it consistent with the goals and objectives of the GON's integrated rural development strategy. For this reason, the proposed Rural Education Development Project will place major emphasis on the development of a revised rural primary level curricula and the installation of more effective systems of delivery to rural populations.

5. Education Sector Assessment: Using contract technical assistance financed by A.I.D., the GON and USAID completed an Education Sector Assessment in December 1975. This effort updated the data base available from the National Plan for Education and was a necessary initial step in the preparation of a new loan for rural education. This assessment has provided the rationale for this project, identified and analyzed educational development constraints, and recommended a series of action programs.

6. Rural Primary Education Study: In November 1976, A.I.D. funded technical experts to analyze alternative rural education strategies and programs which could alleviate constraints identified in the Education Sector Assessment. This study has provided the conceptual framework for the proposed loan/grant project.

Loans:

1. Rural Primary School Construction: In 1962, USAID signed loan agreement 524-L-004 which provided \$540 thousand for the construction of rural schools. The project was completed in 1965 and resulted in the construction of 382 classrooms and 69 auxiliary rooms.

2. Central American University: In 1964, (524-L-008), loan funds were provided to assist in the construction, expansion and equipping of an administration building, library, and engineering facilities. The loan was fully disbursed in 1968.

3. Urban Elementary School Construction: In 1966, a \$1.5 million loan (A.I.D. Loan 524-L-014) was signed with the Ministry of Public Education for the construction of approximately 700 primary level classrooms in urban and semi-urban

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areas. The project was completed in January 1972 and the loan has been fully disbursed.

4. Repair of Elementary Schools: Under the Emergency Reconstruction Loan (A.I.D. 524-L-028), fifteen (15) earthquake damaged elementary school facilities were repaired. Additional funds from this loan in the amount of \$1.4 million were subsequently used to help finance activities programmed under the Education Sector Loan 524-L-027.

5. Education Sector Loan Project (524-L-027): A \$5.3 million A.I.D. Education Sector Loan (524-L-027) was authorized in June 1972. This loan was designed to provide qualitative improvements in the following three major areas, with emphasis at both the primary and secondary levels of education:

- a) Upgrade the qualification levels of teachers and professionals;
- b) Improve education methods and facilities;
- c) Improve management, research, and planning capabilities of the Ministry of Public Education (MPE).

During the final stages of negotiations for this loan, the earthquake which struck Managua in December 1972 seriously damaged or destroyed a large number of educational facilities. As a result of the need to reconstruct these facilities, the thrust of the loan was redirected, within the context of A.I.D.'s emergency reconstruction assistance, to reestablish destroyed or damaged schools, with emphasis on the primary level of education.

As emergency conditions normalized somewhat in 1974, loan funds were allocated to more qualitative MPE improvements such as the printing of textbooks and teachers' guides, training of Ministry staff responsible for carrying out key programs, and implementing selected research and evaluation activities.

This loan was terminated in December 1976.

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F. Other Donor Assistance

A number of multilateral and bilateral agencies have provided and are providing loan and grant assistance to support Nicaragua's overall education goals. The more significant ones are listed below.

CARE

Since 1968 CARE has been active in providing assistance to the Ministry of Public Education for construction of rural schools. The CARE-MPE agreement calls for a tri-partite program in which the Ministry provides transportation of materials, teachers and school furniture; the community provides land, some construction materials, and labor; and CARE contributes construction materials and equipment. Under this program 88 schools have been constructed in Regions II and V.

UNESCO

UNESCO has provided technical assistance to the Ministry of Public Education for a number of years. The majority of this assistance has been for professional personnel to carry out studies concerning various aspects of the system, including supervision, literacy, adult education and audiovisual methods.

OAS

The OAS has assisted the Ministry of Public Education by providing technical assistance and scholarships. Technical assistance has been provided in the field of social studies, mathematics and chemistry at the secondary level, in organization and management; and in statistics and data collection. Approximately 21 scholarships a year have also been provided under OAS sponsored programs. These scholarships have been in fields of administration and supervision, curriculum development; statistics, and library training.

IBRD

In 1974, the first IBRD loan to the education sector was completed. Through this project the GON received assistance at the secondary level for school construction and

equipment for Technical Institutes and Normal Schools. The loan was for \$4.0 million and was matched by a GON counterpart of \$4.0 million. The facilities that were constructed are providing space for over 11,000 secondary school students.

In June 1976, a second Education Loan Agreement for \$11.0 million was signed between the GON and IBRD. This project will extend through 1980, thereby overlapping in time with the proposed GON/AID project which will terminate in mid-1982. The IBRD project's specific objectives include expanding and improving education and training opportunities in rural areas, increasing agricultural training opportunities, expanding and improving secondary education for the semi-rural population, and improvement of teacher qualifications. The relationship between the IBRD and A.I.D. projects will be treated in Section G below.

#### G. GON/AID Project Strategy

The low educational and skill levels of the rural poor in Regions II and V act as a constraint to the GON's integrated rural development strategy in general, and specifically limit the effectiveness of the individual program of the Ministries and agencies involved in the area. Inadequate rural educational services are the rule and the GON realizes that it will take substantial efforts on its part to remedy this situation.

These are several major problems within the educational sector that make the rural education system a constraint to general economic progress. This project will address the following areas of GON concern:

1. An undermanaged Ministry of Public Education (MPE) in the areas of planning, organization, coordination, operations and supervision.
2. An "urban-oriented" rural primary curriculum.
3. Lack of trained teachers.
4. Poorly maintained or nonexistent schools.

1. Under this proposed GON/AID program the GON will take steps to reorganize the structure of the Central Office of the MPE so that it might be more efficient and responsive to the educational needs of Nicaragua. The number

of departments directly reporting to the Minister will be consolidated and reduced. Management systems will be developed to more efficiently handle personnel, communications, and coordination both internally and externally. Special efforts will be taken to upgrade the MPE's planning capability and to reduce the number of rural and urban teachers that do not adequately perform their duties. Key MPE personnel will participate in long and short-term training. In addition, an improved supervisory mechanism will aid in insuring that educational services are delivered to the populace. The advent, within the past year, of a new and vastly improved top management team within the MPE now makes it reasonable to expect that these reforms will in fact be carried out.

2. A key component of the GON/AID project strategy is the development of a new curriculum supported by both radio and extensive use of student materials, that is relevant to the learning environment of the rural areas. Radio is justified as the initial educational delivery mechanism because it is the most cost-effective method in areas of low population density and scarce human resources. The new, superior student materials will permit a major departure from the old, ineffective write-it-on-the-blackboard-copy-it-in-your-notebook method of instruction. Primary curriculum will be adapted from the existing primary curriculum for radio broadcast in the subject of mathematics, reading, agriculture, health and nutrition and general studies (culture and sports). This radio supported curriculum will in turn be adapted for an accelerated basic education program that will be broadcast in the evenings and have as its target group adolescents and young adults (from age 14).

3. The third constraint that the GON/AID program will address is the dearth of trained rural teachers and the lack of support these individuals receive from the MPE regarding curriculum and teaching methods. The MPE will confront this problem by establishing mobile training teams that will travel to the departmental capitals where they will carry out two and six week training programs for teachers and supervisors. These training seminars will deal with the radio-supported primary curriculum, multi-grade teaching, the accelerated basic education program, community development, and group processes and dynamics. It is programmed that each teacher and supervisor will receive a minimum of two weeks of training annually over the life of this project after an initial six week orientation/training session.

4. The fourth thrust of the MPE/AID strategy is to strengthen the rural educational delivery system. That is, improve the mechanisms and especially the infrastructure through which education is made available to the rural poor. This activity will be based on the active participation of Local School Committees. Existing rural primary schools in Regions II and V will be repaired and equipped with furniture as a result of actions taken by these committees. Where there are no schools and the local school committee (LSC) requests that a school be located in their community, the MPE will take the necessary steps to establish a Comarca School Circuit (CSC—defined below) which will deliver educational services to the community. Further support for the educational system will be provided in the form of a localized maintenance system, support and service vehicles, the radio transmitting and receiving capability for the radio-supported primary curriculum, and the supply of large quantities of student materials.

A. Local School Committees (LSC)

Local School Committees will be formed in the rural areas with the cooperation of INVIERNO and the Ministry of Public Health (MOH). It is essential that the educational system receive the support of the community, as the LSC will serve as the contact in the locale. Specifically, the LSC will be responsible for naming the community teacher, maintaining new schools and repairing existing schools, assisting in the construction of new schools and providing assistance in the development of the radio-supported curriculum. LSCs will be formed in communities where a regular primary school or a Comarca Circuit School will be established and in communities that have an existing primary school.

B. Comarca School Circuit.

Comarca is a term used for a small village which is under the jurisdiction of a municipality. Although the Comarca has town leaders or representatives (Juez de Mesta), the community looks to the local municipality and its elected officers for support and services. The Comarca has no explicit political power and must work through the municipality to obtain services provided by the central government.

The Comarca School Circuit (CSC) is an educational system that will provide educational services to grades 1 - 4 in areas where there have been no previous educational services. The CSC is designed primarily for those communities where, because of an insufficient population base, the MPE cannot provide a well-

supported full-time teacher. In lieu of a full-time teacher, the LSC will select a comarca teacher from the local area. This teacher will use the same radio-supported curriculum and student materials as are used in the larger schools to provide basic primary education to both children and adults.

The status of primary education at the Comarca or localidad level at the present time is such that often only one or two classrooms exist to service a large area. Many families are left out of the absorption or coverage area and, therefore, find it physically impossible to send their children to school. The teacher lives in the nearest municipio because there is access to better housing and basic services. In the present situation, the teacher cannot teach in both schools at the same time, therefore, one school lacks a teacher. Even the serviced school may not be fully served for two reasons: (i) inadequate social identification and understanding between the teacher and the isolated community, and (ii) the long distance the teacher has to travel to the school which makes teacher attendance sporadic during the rainy season.

Under the CSC system an expansion of rural educational services will be financially feasible. With the CSC there would be four schools in the same area, four comarca teachers and a master teacher. The objectives of this system are to: (i) deliver primary educational services to the isolated rural areas, (ii) break the isolation in which many rural teachers operate, and (iii) integrate the teacher and school with the community.

### C. Comarca Teacher.

The Comarca Teacher will be a person from the local area who has had some formal schooling and can read and write. He/She will be selected by the community and, if qualified, approved by the MPE. The comarca teacher will be responsible for the daily teaching and operation of the school. He/She will have between 20 - 25 children per shift, and will be paid approximately \$60 a month by the MPE which is about 1/3 the salary of a regular teacher. These three individuals will receive six weeks training prior to initiation of their services and will receive in-service training for another six weeks after their first year and two weeks each year thereafter during the life of the project.

D. Master Teacher.

This individual will be a rural school teacher with a minimum of a bachelor's degree from a normal school. He/She will receive a 10% pay incentive for the added responsibility, plus a free house of satisfactory quality valued at \$9,200. The master teachers will be recruited from those teachers with some rural teaching experience. The master teacher will have the following responsibilities:

- Teach one day a week at each of the community schools.
- Prepare instructional materials for the community teachers one day a week.
- Seek, acquire and coordinate services from the MPH, INVIERNO and other governmental agencies.

In summary, the master teacher will support and capacitate the LSC, coordinate a multi-grade teaching system in the community schools based on the new radio-supported curriculum, train the community teachers in teaching approaches such as demonstration and problem-solving, and assist in the delivery and utilization of student materials.

5. Supervision and Management.

The master teacher will be the link between the MPE and the community teachers and LCSs. The following organizational structure (Illustration 3) demonstrates how the various parties relate.

The supervisor will have at least monthly contact with the master teacher who in turn will have weekly contact with the community teacher and the LSC.

6. Relationship to Existing Rural Schools.

The establishment of Comarca School Circuits is one of the key components in the GON/AID project strategy. However, it complements and folds into a much larger program component which is the improvement of the

educational services provided by existing rural primary schools. This component is a qualitative and not a quantitative expansion of the existing system. It will make better use of available resources that are in place, and involve the local communities in support of and contribution to the public schools program. In essence, this improvement is based upon the revised curriculum, improved teacher training, radio supported delivery system and student materials discussed above.

The new Comarca or community schools and the existing rural primary schools could be linked in many varied ways. An existing rural school, with a teacher that meets the requirements for a Master Teacher, could become the base community for a CSC. A community teacher could be appointed for the existing school and the existing teacher would become a Master Teacher. Surrounding localidades could integrate themselves into the circuit as they organize and solicit assistance from the MPE. The Comarca Master Teacher would remain at the same organizational level as before, but would be assigned to a circuit instead of a single school.

Another example of linkage is where there may be two schools in reasonable proximity of one another but without teachers or with only one. A CSC could be established after the LCSs have organized in those two communities and in other nearby localidades. The teachers would be new but new buildings would not have to be constructed in every community.

In summary, the GOI/AID program strategy is to improve the existing rural educational system and expand it into areas where educational services have previously been unavailable. The CSCs and the existing schools are the infrastructure mechanism through which the improved administration and supervision, teacher training and the new radio-supported curriculum and student materials will impact on the lives of the rural poor.

#### INTEGRATION WITH THE IBRD LOAN

The major distinction between the A.I.D. and IBRD projects is geographical in nature. The program financed by IBRD will be directed at all the Regions of Nicaragua, except Regions II and V where the A.I.D. project will be directed. Although there is no major duplication between the two programs, areas of complementary and coordination will exist during the life of both projects and well into the 1980's. By summarizing the project elements of the IBRD program these areas are easily identified.

(a) **Rural Education Nuclei.** Eighteen rural education nuclei will be constructed, furnished and equipped. Each educational nucleus will constitute a technical and administrative education unit composed of a "base school", two or more "sub-base schools", and several "associated schools". The "associated schools" are four-grade primary schools while the "base and sub-base schools" are six-grade primary schools.

There is substantial complementarity between the nuclear (IBRD) and Comarca (A.I.D.) systems. The nuclear system proposes a network of base centers (grades 1 - 6), sub-base centers (grade 1 - 6) and one-room "associates" schools (grades 1 - 4). If the nuclear system is expanded nationwide the existing rural primary schools receiving assistance under the A.I.D. loan will fit nicely into the nuclear program. The CSCs, or 20% of the schools involved under the A.I.D. loan, would also integrate into the nuclear system because the Comarca units will be schools located where the IBRD program has no intention of constructing rural schools. The "associate" school under the nuclear system could become the base for the CSC with three community schools located in more isolated areas.

The MPE and A.I.D. have studied the IBRD program and find no potential conflict between the nuclear school system and the proposed Comarca School Circuit under the GON/AID project. In fact, the Comarca School Circuits would easily be integrated into the nuclear system if it were to be replicated in Regions II and V. The Comarca system will be implemented in areas where no educational services are now available. The nuclear system will be developed in more densely populated areas where many educational services already exist.

(b) **Agricultural Training Centers.** Nine agricultural training centers will be constructed, furnished and equipped. These centers would train about 2,500 youths and adults annually. Training programs will focus on agricultural production techniques, farm planning, health, nutrition, child care and home management.

The GON/AID project will develop twelve similar centers in Regions II and V in support of the GON's strategy to provide non-formal education to rural youth and adults. The A.I.D. financed effort complements what the IBRD is doing in other regions of Nicaragua

(c) **Secondary Schools.** The IBRD loan will construct, furnish and equip four agricultural secondary schools and 18 lower secondary schools. Few primary graduates

from the GON/AID program will attend these primary schools because they will be built in Regions other than II and V. The MPE and A.I.D. see this IBRD program element as complementary to GON educational strategy but not duplicative in any way to the A.I.D. program.

(d) **Teacher Upgrading Program.** Under the IBRD program teachers from rural primary, secondary and agricultural schools will be trained at the National Education Center (NEC). Upgrading courses will be offered in multi-grade teaching techniques for existing and new rural primary teachers as well as training courses for secondary teachers.

Teacher and supervisor training will be coordinated with the NEC under the A.I.D. financed program. NEC staff will work closely in developing training plans and curriculum, and some NEC personnel will actually participate in the training programs to be offered in the Departmental Capitals.

(e) **Technical Assistance.** IBRD financed technical assistance will be in the areas of primary school administration, teacher training, student evaluation, secondary school administration, and agricultural education.

The majority of A.I.D. funded technical assistance is in the areas of management, curriculum development and teacher training. Teacher training under the A.I.D. project is specifically oriented to training the adapted curriculum and how this curriculum can be used in a multi-grade classroom. This assistance is complementary to what IBRD is doing and does not significantly duplicate efforts in any specific area.

#### H. Program Beneficiaries

The Education Sector Program is designed to benefit the rural poor in two geographic regions, Regions II and V. The GON has selected, and A.I.D. has programmed assistance, to these same regions for the initiation of integrated rural development activities in agriculture and health. This project will serve the same prime beneficiaries and will assume the important complementary role of delivering improved and expanded primary level educational services to children, youth, young adults, and adults in the two target regions. Development assistance had previously been approved for these areas and beneficiaries by virtue of their meeting GON and A.I.D. development objectives criteria: they constitute some of the poorest of the poor majority. (See Annex R for details).

## I. Impact of the Project on Women

### Background

Nicaragua rural women attend and teach in rural and urban schools. In education, females from rural communities have about the same opportunities as males - very limited.

The number of females aged 6 - 14 enrolled in and attending school is about the same as males of those ages, when comparing by age and grade. In the higher grades, there are relatively more girls, but there is also a higher drop out rate.

The high dropout rate is due, for the most part, to the same factors that affect the boys, including economic factors, physical distance and a curriculum irrelevant to rural needs. The curriculum remains the same for both boys and girls until grade 4 when vocational courses based on expected role differences are introduced.

Women form 81% of the primary teaching corps; yet less than 1% of the inspectors are female, ostensibly due to "lack of training." In other public and private programs, women continue in traditional roles such as nurses, home extension workers and social workers, but they seldom hold supervisory level positions. Women consume family income, and they produce family income. In marketing, women are the primary processors of grains as well as the renderers of unprocessed crops; they prepare and sell a variety of food products. With training in basic home cash management, rudimentary accounting, and principles of marketing, these women could raise their incomes appreciably and contribute to greater economic growth in rural areas.

At present, women play an important role in crop production; they form nearly half (40%) of the labor force. However, assuming that more efficient and improved farming techniques reduce the demand for female labor in such activities as planting, field clearing, harvesting and producing seed, there will be an increasing need for employment for women in rural areas.

Many rural women contribute to the support of their families by migrating to the cities. An increasingly large body of evidence indicates that "mothering" is done by grandmothers and aunts, while mothers leave home to work to support the family. Sixty-one percent of migrants to Managua from Region V are women, and they send 50% of their wages home to their families (See Cruz-Rappaccioli Report on Women in the Economy of Nicaragua and PCI Report). They are primarily employed as domestics.

Women have primary influence over health and nutrition in the family; yet their influence is not always the most effective, due to the mother's lack of education and understanding of food values and nutritional needs.

Women are the primary targets of a number of programs relating to health, nutrition, marketing and community improvements. INVIERNO has programs for women, emphasizing their role as housewives and nurturers. FUNDE develops market cooperatives whose membership is primarily female; the Ministry of Health training programs place a great deal of emphasis on child-bearing women and their health problems. Recent conclusions about the relationship between malnutrition and mental development make the education of women even more important in this area.

Women's role in public life in rural areas in Nicaragua is not limited to sitting beside their husbands at civic meetings. In Region II, which is the most developed of the two regions, women are mayors or treasurers of several municipalities, and in Region V, women hold an even larger number of public offices, from mayor of the largest municipality in Matagalpa to mayor of the smallest municipality in Estelí. Given the existing high level of participation in civic government, women would seem to be prime targets for community development and management training programs.

The activities of this project will positively affect both women and men both as receivers and deliverers of educational services. However, to say there will be no negative impact of this project on women is not to suggest any measures of the positive impact the project could have.

#### Measures of Positive Impact

##### A. Administrative Reform and Management Improvement

The number and percentage of women as departmental supervisors will increase to better reflect the percentage of women who are primary teachers. This will be accomplished through the establishment of criteria for selection of supervisors and master teachers that will require experience in teaching at the primary level in rural areas, among other criteria.

##### B. Integrated Community Development

- I. Local School Committees will include women as well as men; and,

in order to assure that hiring is not based on a stereotype of only women as community aides, training for promoters, supervisors, master teachers and local school committees will emphasize that either men or women could be selected, provided they meet the requirements of literacy and interest in teaching.

2. Enrollment of girls and women in primary and adult programs will keep pace with the enrollment of boys and men, and dropout rates for both sexes will decrease by at least 10%.

C. Curriculum Development and Related Educational Materials

Curriculum content will have a balanced appeal for both sexes.

1. Women's voices and men's voices will be used in about equal proportions on broadcast tapes, and care will be taken to cast women at times in non-traditional roles.

2. Participation in classrooms learning activities will not be segregated according to sex-role stereotypes: e.g., boys will be encouraged to participate in nutrition/food preparation activities, and girls will be encouraged to participate in decision making and planning activities.

D. Training for Supervisors and Teachers

Training, which will in its own methods exemplify the action-oriented participation emphasis of the new classroom practices, will be carried out by teams of trainers which include women as well as men.

E. Strengthening Rural Education Delivery Systems

Hiring practices of contractors for school construction and repair will not exclude female applicants.

PART III - PROGRAM DESCRIPTION

A. Program Goal and Purposes

1. Sector Goal

The overall goal of the education sector is to help improve the socio-economic welfare of the rural poor in Regions II and V of Nicaragua. By expanding and improving educational services in these regions, the GON intends to increase the well-being of the rural population. This sector goal is consistent with the GON's Integrated Rural Development goals and USAID's Development Assistance Program. Specifically, the GON's Rural Policy and Strategy Statement sets as a prime objective the increased participation of the rural poor in the Nicaraguan economy and society through, among other activities, expanded literacy training, basic primary education and non-formal skills training. Both the National Reconstruction and Development Plan 1975-1979 and the National Plan for Educational Development, 1971-1980 state that the first priority of the educational system is to meet the educational needs of the rural areas.

The GON projects a resultant increase in the per capita income of the rural poor as more resources and personnel are made available to this sector. In addition, the improved capability to be economically productive should lend to improvement in general living conditions, especially in the areas of health and nutrition.

2. Program Purpose

The GON/A.I.D. program purpose is to insure that the rural population receives a greater number of relevant educational services in an improved learning environment using cost-effective educational methods. Intermediate indicators of the attainment of this purpose will be an increased number of primary aged children enrolled in school, an increase in student retention rates, and an increased number of adolescents and adults receiving basic primary education and occupational and vocational training. An ultimate indicator of program goal attainment, an increase in literacy and numeracy in the rural area, will demonstrate in a global manner the attainment of the program goal.

### 3. Component Purposes

#### a. Component One - Administrative Reform and Management Improvement.

The purpose of this component is to strengthen the institutional and management capacities of the Ministry of Public Education (MPE) in the areas of planning, organization, staffing, coordination, operations and budgeting. In addition, the Administrative Reform will bring about a restructuring of the MPE so that it will be more responsive to the educational needs of Nicaragua. These reforms are highly critical to the success of the loan-assisted rural education development program and satisfactory progress toward their fulfillment will be a condition precedent to proceeding with the operational Component Five.

Attainment of this purpose and/or progress in that direction will be evaluated qualitatively through expert examination of the improvement in MPE operational capabilities.

#### b. Component Two - Integrated Community Development.

Since community participation will be the anchoring force for most of the educational programs to be implemented in this project, the purpose of this project activity is to establish effective local school committees (LSC) to promote demand for and utilization of skills and knowledge and to monitor the performance of MPE personnel in their community.

The effectiveness of the MPE, with the assistance of INVIERNO and MOH, in forming and training these committees will be reflected directly in the number of committees functioning and indirectly in the number of existing schools that are repaired and furnished and new schools built, since the LSCs must solicit assistance from the MPE before any of the mentioned activities can take place.

#### c. Component Three - Development of Curriculum and Related Educational Materials.

The purpose of this component is to enable the system to meet basic skill and knowledge needs of the rural population through improved curriculum and educational materials.

B. Program Elements

1. Administrative Reform and Management Improvement

a. Background

(1) The Problem. The Ministry of Public Education (MPE) must develop an improved administrative and management capability if it is to efficiently implement an expanded rural education program. In recent years, the educational system in Nicaragua has been expanded and extended far beyond the MPE's existing capacity to plan, manage, operate and control. Conditions in the rural schools reflect the problems found in the Ministry. For example, while there are a significant number of highly dedicated teachers working in the rural areas, they are often demoralized and frustrated because of the lack of supervisory and material support they receive from the MPE.

There is inadequate management capacity within the MPE to systematically establish educational goals, objectives and priorities. A planning-management information base does not exist, and existing information regarding the educational system is frequently incomplete, contradictory and out-of-date. Only recently has the MPE taken steps to determine the location, capacity, utilization, and condition of school buildings under its jurisdiction.

In terms of organization, the Ministry lacks basic handbooks outlining administrative policies, rules, and procedures. In addition, the organizational structure of the MPE is not clearly defined which has led to unnecessary centralization of decision-making.

Competent and effective personnel are the basis for a responsive organization. There is no program at the present time for training of MPE top and middle-level personnel. No set selection, evaluation, or placement procedures exist nor are there position descriptions for professional employees. Training of rural supervisors is sporadic, and as a result, rural teachers are provided little logistical or supervisory support.

The success of the GON's Integrated Rural Development Strategy will require coordination of program planning and implementation between the Ministry of

Public Education and other Ministries and agencies providing educational-agricultural-health-community programs and services. At the present time there is only informal cooperation between these organizations. An effective, integrated program will require that formal agreement is reached between the MPE, INVIERNO, and MOH on their roles and responsibilities, and the procedures that will govern the interactions.

Within the MPE there is a general inefficiency in its day-to-day operations at all levels. Specific problems experienced by the central office include: (i) very little interdepartmental communication or understanding, (ii) inadequate interdepartmental coordination on programs requiring unified efforts, (iii) inadequate professional and pupil personnel records system, (iv) a relatively closed system for employment and (v) little relationship between work outputs to pay received. The management logistics of supplying schools with the required supplies and furnishings also remains a problem, as does MPE's school maintenance program.

A final area of concern is the existing budget and financial system employed by the MPE. The budgeting system is inflexible as it is not only difficult to transfer funds between programs, but even disbursements of allocated funds experience unnecessary bottlenecks and red tape. In addition, the budgeting system is not informative as to simple program budgeting data and accurate cost-benefit information on existing programs.

(2) GON/A.I.D. Administrative Reform Strategy. The Ministry of Public Education is well aware of its management problems and is willing to invest the necessary resources to carry out a major administrative reform. The first component of this project is designed to help the MPE correct existing organizational deficiencies and increase internal management skills and expertise. A new Minister of Education was installed in May, 1976. Since that time, many personnel changes have been made which tend to maximize the capacity in terms of implementation of this loan and grant program. Specific actions will be carried out in the following areas:

Planning

(a) A single set of educational goals, objectives, and priorities will be developed. These objectives and priorities will be stated in measurable terms and include an implementation plan and time-line for achievements.

(b) A single coordinated planning-management information system will be established to provide accurate information that can be utilized in making planning and management decisions.

Organization

(a) A "Policy-Rules-Procedures Handbook" will be developed.

(b) A new organizational structure for the Ministry of Public Education will be established which will reduce centralization of decision-making.

Staffing

(a) Personnel position descriptions, roles and responsibilities will be written and approved.

(b) Personnel rights, benefits, and salary scales will be developed and approved. Incentives for recruitment and retention of rural teachers will be developed and approved.

(c) A series of short-term management training programs for top level management personnel will be carried out, along with a short and long-term training program for middle-level management and technicians.

(d) An improved school supervisory system will be developed which will include a procedures manual and periodic in-service training for supervisors.

Coordination

(a) A formal agreement between the MPE, INVIERNO and the MOH will be reached describing respective roles and responsibilities, and the procedures that will govern their interactions under the integrated program.

(b) An operational mechanism will be established to facilitate the day-to-day collaboration between these institutions in planning and implementing coordinated educational-agriculture-health-social programs in Regions II and V.

Operations

(a) An interdepartmental communication system will be established.

(b) Existing records systems will be reorganized.

(c) A decentralized distribution system for school supplies and equipment will be developed.

(d) The MPE's school maintenance program will be strengthened.

Budgeting

(a) Efforts will be made to reduce the ratio of salaries/operating expenditures.

(b) Budgeting and disbursement operations will be revised in order to facilitate a flexible and responsive financial system.

(c) A maintenance budget will be developed and approved.

b. Inputs and Budget

Inputs to the first component of this program will be financed from budgetary allocations from the GON to the MPE and from A.I.D. project funds. Inputs by source and the estimated budget for the component are as follows:

(1) MPE Inputs. The GON counterpart for this portion of the project is composed of operating costs and some equipment costs. Operating

costs include personnel that will participate in the administrative reform and the expenses associated with office space, secretarial services, office supplies, vehicle maintenance, etc.

The MPE will finance \$600,000 of increased operating costs over the life of the first component. The MPE counterpart also includes \$175,000 for commodities such as office equipment and furniture. Upon completion of A.I.D. funding continuing operating costs of this project component are estimated to be at least \$200,000 per year.

(2) A.I.D. Inputs

(a) technical Assistance. A coordinated technical assistance program of substantial scope is required to assist the MPE in reorganizing and strengthening its management systems and capability. To provide this needed coordination, an institutional contract will be essential to acquire the needed personnel. Technical assistance within the contract will be distributed as follows:

i. Education Management Advisor (24 months). Will act as team leader for the advisors under the first component of the project. This individual will assist the MPE to define educational objectives and priorities, advise the MPE personnel in the areas of Ministry reorganization, assist in coordination activities with other Ministries and agencies, and assist in preparing implementation plans and documents for meeting conditions precedent to the loan. Estimated cost: \$144,000. Funding: Grant

ii. Planning-Management Information Systems Advisor (18 months). This advisor will be a systems designer who will work with MPE personnel in developing an integrated management-oriented planning-monitoring-evaluation system. The system must focus attention on specific management problems within the Ministry and orient all the systems to generate timely, accurate information for analysis and management decisions. After the initial design, the advisor will refine the system and train MPE personnel to operate it. Estimated cost: \$108,000. Funding: Grant.

iii. Evaluation Advisor (12 months). Initially this individual will assist the MPE's evaluation office in developing internal

evaluations for existing and new programs. He/She will also coordinate the gathering of baseline data for the GON/A.I.D. Rural Educational Development Program (see Special Studies). In 1978, when there will be fewer new evaluations to be designed, the advisor will concentrate on in-service training of management personnel, systems development, and modifying the evaluation process to the management style of MPE personnel. Estimated cost: \$60,000. Funding: Grant.

iv. School Construction and Repair Advisor (12 months). This individual will assist the Ministry in its continued efforts to develop an inventory of schools in Regions II and V and later for the entire country. Assistance in planning and management of facilities investment will also be a prime responsibility. In the area of repair, the advisor will help MPE personnel clarify how to divide repair responsibilities between the community and the Ministry and to develop a practical system for initiating action, contracting specialized work, etc. Estimated cost: \$60,000. Funding: Grant.

v. Short-Term Technical Assistance (18 months). Various advisors will be needed for one to six months to work on specialized problem areas within the Ministry. Some of the areas of concern will be:

- Materials Distribution
- Records System
- Budgeting and Finance
- Communications
- Computer Programming

Estimated total cost for short-term advisors: \$93,000. Funding: Grant.

(b) Special Studies. Two special studies will be performed during the initial stages of the administrative reform in order to build a solid informational base from which the reform and the Rural Education Program can begin. The first study will be an indepth investigation of how the Ministry of Public Education functions at the present time. MPE and USAID personnel feel that such a study is necessary if the Ministry is to be reorganized in the most effective manner. In depth analyses will be carried out in the areas of planning, evaluation, internal communication and coordination, decision-making and interdepartmental operations. Estimated cost: \$50,000. Funding: Grant.

The second study, to be carried out concurrently, will develop baseline data on the specific educational needs of the rural population in Regions II and V. Information, both primary and secondary in nature, will be gathered and analyzed in the following specific areas of interest, (i) adolescent and adult educational needs, (ii) socio-economic characteristics of Regions II and V, (iii) existing education curriculum available, (iv) basic curriculum needs, and (v) most favorable hours for educational radio broadcasts. Estimated cost: \$50,000. Funding: Grant.

(c) Training. Many MPE top-level and mid-level professionals will require training in management skills to become more effective managers. The training should be conducted in Nicaragua or Central America to the greatest extent feasible, to ensure that training is convenient and relevant to the Ministry. Both long and short term training will be necessary for selected technicians who must develop specific skills that require extended training in a foreign country.

i. In-Country Training. Short-term training opportunities exist within Nicaragua which will permit Ministry personnel to upgrade their managerial and technical capabilities. The Central American Institute of Business Administration (INCAE), the two local universities and local business institutes all provide 1 - 4 week seminars in the management and operations fields that would be relevant to the MPE's problems. MPE personnel will attend short-course in such subject areas as follows: Motivation Training, Community Development, Planning and Project Design, Statistical Analysis and Presentation, Computer Programming, Program Budgeting and Evaluation, Public Administration and Personnel Management. Estimated cost: \$110,000. Funding: Loan.

ii. International Training. Relevant short-courses and long term training that are offered abroad will be financed under this grant. This training abroad will be in such areas as radio education technology, rural education, measurement and evaluation, primary curriculum development, educational planning/management, computer programming, radio-supported education technicians, material development and production, population education. Approximately 120 person/months of training out-of-country will be programmed. Estimated cost: \$130,000. Funding: Grant.

(d) Computer Expenses (including software and time). A.I.D. will finance \$75,000 of computer software and time for the MPE. The

availability of computer capability will be essential to provide an accurate and accessible listing of the numbers of teachers, schools, pupils and central office personnel. In addition, the computer time will facilitate information such as school building quality, number of students per school, personnel salaries, etc.

(e) Commodity Assistance. Commodity requirements consist primarily of office equipment for the central office. Upgrading of some key offices (i.e., Evaluation, Investment) will be necessary to adequately begin the administrative reform. A.I.D. loan funds of up to \$100,000 will be available for office equipment such as duplicating machines, copiers, typewriters, calculators and any other necessary office equipment expense.

(f) Budget. Aggregating inputs from the above sources, the budget for this component is:

SOURCE OF FUNDS

(In U.S.\$000)

<u>Uses of Funds</u>	<u>A.I.D.</u>		<u>GON</u>	<u>TOTAL</u>
	<u>Grant</u>	<u>Loan</u>		
Technical Assistance	465,000			465,000
Special Studies	100,000			100,000
Training	130,000	110,000		240,000
Commodities		100,000	175,000	275,000
Computer Services	75,000			75,000
Operating Costs			600,000	600,000
<b>TOTAL:</b>	<b>770,000</b>	<b>210,000</b>	<b>775,000</b>	<b>1,755,000</b>
<b>A.I.D. Funding Total:</b>	<b>\$980,000</b>			

(g) Component Timetable (See Annex S)

d. Outputs and End of Component Status.

i. Outputs. The MPE and A.I.D. financed inputs will go to achieving the following outputs:

- An up-to-date, flexible and competent planning and evaluation units within the MPE.
- An effective system to coordinate MPE activities with INVIERNO, Ministry of Health, Ministry of Agriculture and other agencies.
- An integrated management-oriented planning-monitoring-evaluation system which generates timely accurate information for analysis and management decisions.
- The application of more effective operational methods in the areas of communications, records, budget, distribution of materials, etc.
- A revised organizational structure of the MPE which has been formally agreed upon and implemented.

ii. End of Component Status. The end of component status is an efficiently operating Ministry of Public Education which has the flexibility and responsiveness to meet the educational needs of the rural poor.

e. Justification for Partial Grant Financing. This project component is oriented towards improving the management and technical capabilities of education sector personnel and bringing about a restructuring of the Ministry of Public Education so that it will be more responsive to actual needs. These reforms are highly critical to the success of the rural education development program. Only if substantial changes are made in the day-to-day operations of the Ministry can it expect to efficiently manage its existing and new rural and urban education programs. Management skills and knowledge must be acquired early if loan resources are to achieve maximum impact and if a full measure of support is to be given to the radio-supported curriculum, teacher training, Comarca School Circuits, and the existing rural primary schools. Not only do these activities require long lead times but some of them are fraught with potential political difficulty for the MPE. The availability of a substantial measure of grant funding for this key project component is viewed as an important form of support to the new MPE management team in its efforts to bring about the needed reforms.

## 2. Integrated Community Development (Component Two).

a. Background. Among the key constraints working against the MPE in its efforts to provide primary education to rural inhabitants are: (i) the geographic dispersion of the population, (ii) the limited resources devoted to education from the central government or from external sources, and (iii) the inadequate quality of both teacher preparation and teaching materials.

To deal with certain aspects of these constraints a strategy was developed that calls for the increasing involvement of the target communities in their own development and the establishment of an institutional link at the community level between the demand for educational services and the supply of these services.

The MPE recognizes that the present system of rural primary education does not accomplish even traditional objectives. The option of increasing access to primary education by simply expanding the number of rural schools without, in addition, making certain fundamental qualitative changes in the overall system, has been determined to be ineffectual for various reasons. Rural schools built under the present system often have no teachers to fill them. Inappropriate curriculum or no applied curriculum also result in high repeater and drop out rates during the early years of school. Teachers often live outside of their communities, thus fostering mutual disinterest and, frequently, distrust. School maintenance tends to fall between the chairs because MPE is too distant and the local people uninvolved.

This project provides an alternative approach to satisfying the educational needs of local communities (localidades or Comarcas) which relies on active community involvement and responsibility. The only successful educational programs in rural Nicaragua have invariably counted on local resources. (See AED, Nicaragua Education Sector Assessment, 1975). Thus, to deliver educational services that are meaningful to a student's actual values and experiences, and useful in his or her daily life, concerted action based on community demand for relevant education will be needed to assure that the supply of educational services actually promotes learning. Active local community organizations thus are among the keys to success of both the formal and non-formal educational improvements proposed in this project. Testing and evaluation of new curriculum at the local

level requires teachers receptive to and communicating with the communities they serve. There must be mechanisms through which the community can require accountability of both teachers and the MPE itself.

b. Local School Committees. Community participation will be the anchoring force for the successful implementation of this project. Local school committees (LSCs) will be formed in the rural areas of Regions II and V. The LSCs will be the mechanism through which the community will communicate with MPE personnel, establish cooperating links with other communities, identify the educational needs of their area, and monitor educational progress.

Two types of LSCs will be developed under this program. LSCs will be formed in some 400 communities where the approximately 100 Comarca Circuits will be operating. The other committees will be organized where an existing primary school is functioning, or should be functioning but has not due to the absence of a teacher. The members of the LSC will be persons of the community that demonstrate an interest in the educational well-being of the area. These persons will normally be individuals who have also shown previous leadership ability. The number of people on the LSC will vary with the level of human resources in the area but it is projected that 3 - 7 people will perform the tasks described below. The LSC will elect a chairperson and meet regularly once a month.

The responsibilities of the LSCs in both the Comarca and existing schools are the following:

- (1) Understand the regulations and standards governing primary education in Nicaragua.
- (2) Establish mutually supporting relationships with the personnel of the MPE, INVIERNO and the Ministry of Public Health (MPH).
- (3) Understand the procedures for soliciting technical and financial assistance.
- (4) Solicit and organize community support in constructing new, or repairing existing, classroom facilities.
- (5) Supervise physical plant maintenance.

(6) Advise MPE personnel on the degree to which the content of the curriculum meets or does not meet community and student needs.

(7) Serve as an example to the community of civic spirit.

The Comarca LSC will have additional responsibilities to those listed above. The LSC will choose the community teacher from the community and support this person in his/her activities. A candidate for this position must be functionally literate. The LSC will meet monthly to discuss and assess the community teacher's performance. The Chairperson of the LSC will be in charge of receiving the paycheck for the community teacher (\$60/month) from the MPE Master teacher. Based on a favorable assessment of the community teacher's performance by the LSC, the Chairperson will countersign the check and deliver it to the community teacher. The check can be cashed only by the community teacher. If the performance of the community teacher is considered very poor, the LSC can return the check within a week to the Ministry with an explanation of its return. The Department of Primary Education of the MPE will take the necessary steps to rectify the unsatisfactory situation by sending a supervisor to investigate and report on the school conditions in the subject community. If this system of checks and balances proves workable at the comarca level, a natural consequence will be community pressure for its expansion to the regular system.

c. Interministerial Cooperation. The MPE will not be the first or only governmental agency carrying out community development work in Regions II and V. In 1976, the Institute for Campesino Welfare (INVIERNO) initiated activities directed at increasing the economic well-being of the rural poor in these two regions. Through its Agromocs, INVIERNO has made substantial contacts in the rural areas. Each Agromoc reaches an average of 50 producers, supplying them with technical assistance and community development services. He also serves as a link for the credit delivery service and for the marketing operations related with outputs and inputs. Other INVIERNO experts support the work carried out by the Agromoc, providing him with technical advisory services in areas related to his work. The Agromocs have contacts in over 500 localidades or Comarcas (See Annex I). In these areas they are forming and training local groups. The purpose of promoting local groups is to encourage the social and cultural development of the individual

and to achieve a greater degree of social unity in the local area. With a trained and organized rural population, INVIERNO sees the increased probabilities of success for all development programs.

The Ministry of Health (MOH) is also beginning to expand its grassroots based health program from the successful pilot program in Esteli to a regional program in Region V and later into Region II. A key component of the MPH program, as well, is the development of community participation mechanisms such as village collaborators and community health committees. This rural extension arm of the MOH, referred to as PLAN SAR, will assist communities in reducing basic health problems and in carrying out specific health improvement projects. The core activities are preventive in nature and include environmental sanitation - potable water and latrines - and immunizations, plus sanitary education like hand washing and food handling. (See Rural Health Services Project Paper for more detail).

Under the MOH program, thirty-four trained health promoters are establishing health committees in communities in which INVIERNO's Agromocs are presently working. The MOH and INVIERNO have signed a formal working agreement where each organization's respective responsibilities are clear and understood. The health promoters will work with the Agromocs in identifying and organizing the communities.

The health committees will choose a rural health collaborator who will coordinate the dissemination of health materials, information and some medicines. The collaborator must have an interest in health matters and be able to read and write.

The MPE does not wish to duplicate the efforts of INVIERNO and MOH in Region V and later in Region II. An additional group of promoters would saturate the area and duplicate unnecessarily the number of government efforts in one concentrated area. Therefore, the MPE has reached an informal agreement with INVIERNO and MOH under which MPE efforts to form LSCs will build upon the organizational base that the other two institutions have already developed. It is realized that local leadership capability cannot be spread too thin or it will weaken all governmental efforts in the rural area. By using committees that are already formed, the MPE can further train those people who have a proven track record in community action programs.

The MPE considers all rural primary teachers and their supervisors as potential community developers. Four MPE community development promoters will provide special support to existing MPE personnel in the field (teachers and supervisors), and coordinate their efforts with INVIERNO and MOH personnel. With the MPE promoters supporting and reinforcing their activities, the three groups can adequately organize and train the LSCs that will be formed over the life of this project. Interministerial cooperation will work in the following manner. The MPE promoter will contact the Agromoc and health promoter who are working in a particular area. They will identify localidades where a school needs to be built or repaired and where community organizations are in place. The MPE will then set up a date through the Agromoc and/or the health promoter to meet with the local committee. The MPE promoter could represent the MPE or he/she could send a local supervisor or teacher who has received community development training (see Section III.B.4) to assist communities organize LSCs. Follow-up will be provided by the promoter, supervisor, or the teacher who will assist the LSCs in identifying community educational needs, constructing and maintaining physical facilities, monitoring educational programs and coordinating support of other GON agencies. The responsibility for community educational development will eventually be passed on to the local teacher as soon as he/she is named and trained. The MPE promoter will then function primarily as a support and resource person for the teacher.

Formal cooperative agreements with INVIERNO and the MOH will be conditions precedent to the other proposed loan activities. These agreements should be negotiated and signed as one of the first steps under the Administrative Reform Component of this program.

d. Inputs and Budget. Inputs to Component Two of the program will be financed from three sources: budgetary allocations from the GON to the MPE, A.I.D. grant funds and A.I.D. loan funds. Inputs by source and the estimated budget for Component Two are as follows:

(1) MPE Inputs. The Department of Non-Formal Education will be responsible for the MPE's community development efforts.

(a) Personnel. The central MPE office will be staffed with two permanent employees who will support and monitor all community development efforts in Regions II and V. They will also be responsible for maintaining good working relationships with the governmental and private institutions who are

involved in community development in the same regions. Four promoters will be hired who will receive a general orientation in the central office and then placed in Region V. In 1980, one of the promoters will be transferred to Region II to begin working with the MPE's supervisors and teachers in organizing local communities. Personnel costs for this activity for the life of the project are estimated at \$206,000.

(b) Operating Expenses. The MPE will cover the operating expenses of the program which are estimated at \$155,040. These include material costs for designing and printing community development materials, office supplies, traveling expenses for the central staff and the foreign expert in their support roles, and maintenance and fuel for the MPE vehicles. Ongoing costs of \$81,000 per year after project completion will be met by the MPE.

(2) A.I.D. Inputs

(a) Technical Assistance. A.I.D. will finance the services of a community development expert. This individual will cooperate with MPE personnel in establishing a permanent community development capability within the MPE. For a period of 24 months this advisor will work to orient the MPE promoters, assist in the institutionalization of a working relationship in the areas of community organization, group dynamics and leadership development with other appropriate ministries, develop promotional field materials, organize the central support office and monitor and evaluate field progress. This advisor and the central office will also develop the section of the proposed training program for MPE personnel dealing with community development. The cost of the advisor is estimated at \$120,000. Because of his/her critical importance to the project, he/she will be grant funded.

(b) Vehicles. A.I.D. will finance the purchase of six (6) four-wheel drive Jeep-type vehicles at a cost of \$7,000/unit. Four, 4-wheel drive promotional vehicles, equipped with an electric generator, movie and slide projector, microphones and a sound system, will also be purchased over the first two years of the project for use in community development activities. The unit cost of these vehicles is estimated at \$12,500. These promotional vehicles and the Jeeps will be available to all MPE personnel in Regions II and V who assist in community development work. The MPE as condition precedent to the loan will plan and implement arrangements for local maintenance and fueling of these vehicles. The promoters will be responsible for scheduling their use. These vehicles will be loan funded.

(3) Component BudgetSOURCE OF FUNDS

(In US\$ 000)

<u>Use of Funds</u>	<u>A.I.D.</u>		<u>GON</u>	<u>TOTAL</u>
	<u>Grant</u>	<u>Loan</u>		
Technical Assistance	120,000			120,000
Personnel			206,000	206,000
Operating Costs			155,040	155,040
Vehicles		92,000		92,000
<b>TOTAL:</b>	<b>120,000</b>	<b>92,000</b>	<b>361,040</b>	<b>573,040</b>

A.I.D. Funding Total: \$212,000

e. Component Timetable (See Annex S)f. Outputs and End of Component Status

(1) Outputs. The major expected outputs will be a trained central office staff within the MPE which will efficiently support the MPE promoters in the field. Plus, the promoters will be forming and training local school committees with the assistance of INVIERNO and MOH personnel.

(2) End of Component Status. Effective local school committees which are actively promoting demand for and utilization of skills and knowledge will be the end of component status. These LSCs will be actively involved in building and/or repairing schools, equipping classrooms, monitoring teachers and working to upgrade the general well-being of the community. LSCs will be the mechanism to insure that relevant educational services be delivered to their area.

involved in community development in the same regions. Four promoters will be hired who will receive a general orientation in the central office and then placed in Region V. In 1980, one of the promoters will be transferred to Region II to begin working with the MPE's supervisors and teachers in organizing local communities. Personnel costs for this activity for the life of the project are estimated at \$206,000.

(b) Operating Expenses. The MPE will cover the operating expenses of the program which are estimated at \$155,040. These include material costs for designing and printing community development materials, office supplies, traveling expenses for the central staff and the foreign expert in their support roles, and maintenance and fuel for the MPE vehicles. Ongoing costs of \$81,000 per year after project completion will be met by the MPE.

(2) A.I.D. Inputs

(a) Technical Assistance. A.I.D. will finance the services of a community development expert. This individual will cooperate with MPE personnel in establishing a permanent community development capability within the MPE. For a period of 24 months this advisor will work to orient the MPE promoters, assist in the institutionalization of a working relationship in the areas of community organization, group dynamics and leadership development with other appropriate ministries, develop promotional field materials, organize the central support office and monitor and evaluate field progress. This advisor and the central office will also develop the section of the proposed training program for MPE personnel dealing with community development. The cost of the advisor is estimated at \$120,000. Because of his/her critical importance to the project, he/she will be grant funded.

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(3) Component BudgetSOURCE OF FUNDS

(In US\$ 000)

<u>Use of Funds</u>	<u>A.I.D.</u>		<u>GON</u>	<u>TOTAL</u>
	<u>Grant</u>	<u>Loan</u>		
Technical Assistance	120,000			120,000
Personnel			206,000	206,000
Operating Costs			155,040	155,040
Vehicles		92,000		92,000
<b>TOTAL:</b>	<b>120,000</b>	<b>92,000</b>	<b>361,040</b>	<b>573,040</b>

A.I.D. Funding Total: \$212,000

e. Component Timetable (See Annex S)f. Outputs and End of Component Status

(1) Outputs. The major expected outputs will be a trained central office staff within the MPE which will efficiently support the MPE promoters in the field. Plus, the promoters will be forming and training local school committees with the assistance of INVIERNO and MOH personnel.

(2) End of Component Status. Effective local school committees which are actively promoting demand for and utilization of skills and knowledge will be the end of component status. These LSCs will be actively involved in building and/or repairing schools, equipping classrooms, monitoring teachers and working to upgrade the general well-being of the community. LSCs will be the mechanism to insure that relevant educational services be delivered to their area.

3. Development of Curriculum and Related Educational Materials:  
(Component Three).

a. Background

The MPE recognizes that the limited educational services in the rural areas of Nicaragua are not meeting the needs of local communities. Not only is there a lack of teachers and, in some communities, a lack of schools, but student absenteeism and attrition point to problems beyond the solutions offered by more schools and more teachers.

The record is not good for either urban or rural schools, but the extremely poor showing of the latter is an indicator of problems specific to rural areas. The Ministry of Education has, in the fairly recent past, engaged in curriculum development and textbook production activities. But the results of these efforts have not been effective in the rural areas. Some reasons for this ineffectiveness are surface problems such as the expense and difficulty of training teachers from outlying areas, the absence of supply depots in rural areas which could deliver sufficient textbooks to meet the demand, and the expense of producing up to date texts coordinated with the curriculum guidelines. All too frequently, when a rural school does have textbooks, they are outmoded editions which bear little or no relationship to the curriculum guide in use.

However, there are deeper reasons for the failure of the schools to hold the interest of rural students. Curriculum content bears little relationship to the experience of rural children or their parents, and a rote memorization teaching method is antithetical to children whose entire outside of school experience is to learn by doing. Aside from the chalkboard and notebooks into which students copy lessons written on the board, rural schools offer no worksheets, manipulative materials, or other action-oriented activities.

A third level of reasons for the failure of the rural curriculum to meet student needs is the reluctance of parents to send their children to school. One of the unfortunate ironies of the Nicaraguan situation is the campesino's mistrust of formal education. Formal education has been sold to the campesino here, as it must have been sold everywhere in the developing world, as the surest road

from rags to riches. Indeed many poor farmers have sacrificed to send their children through the full six years of rural primary school. The products of this system quickly become luminaries among the rural poor, and joyous, hopeful parents watched as their progeny, in search of new opportunities, marched off to increase the over-swollen ranks of the unskilled and unemployed in urban centers. An even greater irony is the fact that these students could have made meaningful contributions in the rural areas.

The advent of INVIERNO and the Rural Health program is beginning to change this outlook. The rural poor are renewing their faith in education. They are the beneficiaries of the training and demonstration programs sponsored by INVIERNO, and a direct result has been that several communities have asked INVIERNO for assistance in building new schools and acquiring teachers. Moreover, as their incomes increase, new horizons are opening, and undoubtedly the poor want to be able to take full advantage of these opportunities, not only for their children, but for themselves.

In the INVIERNO communities, the most pressing need perceived by the adult campesino is to acquire a basic education. The purpose is not literacy *per se*, but the ability to use the tools of a basic education to learn better production technologies such as irrigation and double cropping in the dry lands; mixed cropping in humid areas; to organize and maintain his own accounts; purchase and repair equipment; become increasingly effective in financing production and in marketing his crops; and ultimately join new ventures in farming and small farm enterprise.

b. Component Strategy

In consideration of the differing needs of the rural adult and the rural child and the levels of difficulty of the constraints, this project proposes a three pronged curriculum strategy.

The first prong of the strategy is to counter the surface problems with improved teacher training brought directly to the rural areas (see Training Component), re-organized departmental support systems which will include decentralized supply centers (see Administrative and Management Reform), a rural radio

system to supplement and provide a structure for teacher-based classroom instruction, and guides and student worksheets coordinated with curriculum content.

(1) Radio and Tape Cassettes. The use of radio broadcast and/or tape cassettes, combined with consumable worksheets was judged to be the least costly, most effective medium for not only improving student performance, but assisting teachers to achieve a logically sequenced presentation of material. The teacher-assisted radio or tape lesson has a flexibility which the traditional teacher's guide/text book approach does not possess. If the evaluation of a taped lesson in the radio sequence shows that it needs improving, the changes can be retaped in that single lesson, the individual student work sheet changed, and the teacher informed through the supervisor or master teacher, or even through radio broadcast, without the expense of printing an entire text.

Radio is already in use in Nicaragua in both formal and non-formal education. The model for the effective use of radio in the traditional school system in Nicaragua is the A.I.D.-sponsored MPE/Stanford University Radio-Mathematics Project based in the Region II Department of Masaya (See Annex J). The 1976 evaluation of the curriculum for second grade shows that students in the radio-assisted program did twice as well on standardized tests as the control group of students. In addition to these significant gains in student performance, the project required only two 3-hour teacher training sessions instead of the 2-weeks originally scheduled. Teacher response to the program has been excellent. Math lessons for Grades 1 and 2 are now broadcast in 65 classrooms in the Departments of Masaya, Granada and Carazo in Region II. By 1978, the program will cover all primary schools in the country with lessons through the fourth grade. MPE is clearly in favor of expanding the radio program in the light of its excellent success in a subject area where results have usually been poor.

Primary lessons will be broadcast in the mornings, and adult classes will be broadcast on a regular schedule in the evenings. However, to provide greater flexibility in scheduling in communities where the regular broadcast time is not convenient, or a broadcast is missed because of power failure or other interference, the supervisors in charge of each 20 teachers will have a duplicate set of all taped lessons for both primary and adult education. In addition, each rural adolescent center will have a set of the adult education tapes. Teachers will be able to borrow these tapes and use them as needed.

The radio provided each classroom will be a combination radio/recorder/player so that teachers may also record lessons from the broadcast and replay them later as necessary. Each teacher will be provided five blank tapes for this purpose.

(2) Primary Curriculum. The next level of problem is to be countered by basic education curriculum revised to meet the needs of rural primary school age children, to be presented through radio broadcasts and/or tape cassettes with extensive printed materials for in-classroom followup activities which the teacher will carry out with the students.

The curriculum development procedure used in the Masaya Radio Math Project offers a viable method for other subjects as well. The official primary curriculum was used as a base for the radio lessons developed by a team composed of professionals in curriculum, guide and script writing, research and evaluation, graphic arts, tape production and teacher training. Curriculum content was re-sequenced and material relevant to student needs was introduced as each broadcast lesson was developed. Feedback from teachers and field evaluators provided a basis for further revision of curriculum.

Curriculum development for this project will be concentrated on reading, health/nutrition and agriculture. MPE staff will also adapt for radio the basic curriculum for social studies.

Reading lessons will be evolved from the official curriculum for language arts, with the content being changed to include health, nutrition, and agriculture messages as well as imaginative literature. Not only will reading specialists develop this curriculum, but there will also be inputs from the experts in the other subject areas.

Health/Nutrition curriculum for primary school age rural children is presently being developed by a joint MPE/MOH committee. This material will serve as the basis for radio lessons, but other material pertinent to conditions in Regions II and V, derived from the baseline study conducted under the grant and other available INVIERNO data, will also be included.

Agriculture curriculum for primary school is presently very scanty and is, for the most part, derived from the secondary school curriculum. Therefore, a major effort will be mounted to develop appropriate curriculum in this area. Much of the agriculture classroom activity will be concentrated on the school garden which corresponds to the home gardens for which INVIERNO provides technical assistance. The school garden will not only serve as a student demonstration plot in agriculture, but it will play a similar role in nutrition education.

Curriculum developers for this area will work closely with experts from INVIERNO, MOH, MAG and the agricultural schools.

#### Number of Primary Radio Curriculum Broadcast Lessons

Because a radio-supported curriculum provides a structure and sequence for teachers, and results are more easily measured, the math and reading curricula, where results are crucial, will be broadcast five days a week for grades 1 - 4. There will be approximately 170 lessons (broadcasts) for each grade, each year.

To conform to present MPE scheduling for the primary science curriculum (See Annex J. ), health and nutrition will be broadcast once (1) a week for grades 1 - 2 combined and twice (2) a week for grades 3 - 4, or a total of 120 lessons per year.

Agriculture in the primary curriculum is to be basically a concrete learning experience based on activities related to the school gardens. Therefore, broadcasts on agriculture will be limited to once a week with the same broadcast providing information for all grades. Total broadcast tapes prepared will be 40, but there will be activity guides for all four grades.

Primary Social Studies lessons will also be prepared for broadcast to grades 1 - 4 at the same time, once a week. Teachers' post-broadcast classroom activities will vary according to grade level (see Multi-Grade Teaching Annex), and teachers' guides and worksheets will be prepared for all four grades for the 40 lessons.

Except for math, (grades one and two), which is already prepared, lessons will be twenty minutes long, with a ten minute teacher supervised follow-up. Then, as the next broadcast begins, students who received the previous broadcast can continue, using their worksheets.

The Stanford Radio Math Project lessons will be used in the primary schools in Regions II and V. Although Stanford will have developed lessons for grades 1 - 4 by the second year of this project, and, therefore, the cost of developing

this curriculum is not included in the budget, materials for teachers and students will have to be printed to serve the rural education project schools, therefore, those costs and the cost of additional tapes are included.

(3) Adult Education. The third problem level, adult involvement in the educational process, will be addressed through a coordinated strategy for providing adult educational services, and adult involvement in the local school committees.

The key to the adult education strategy is to follow INVIERNO and the Rural Health programs into the communities in Regions V and II. It will not lead into other communities at least in the short to medium term. The purpose of this approach is twofold: First, community infrastructures will have been established by INVIERNO's Agromocs which will expressly serve in confirming or in better articulating the perceived needs of the campesinos, as indicated in existing INVIERNO baseline studies; and second, the availability of the Agromocs and Health promoters will facilitate the curricula development, testing and correction process.

The second step will be to initiate the process of adapting and programming curricula to suit the perceptions and needs of the campesinos. Several sources are readily available for this process. The most obvious is the set of INVIERNO objectives in any given community. These materials will be available, inter alia, in the form of crop calendars with specific time phased objectives to be achieved each cropping season. A second source of materials readily available for adaptation is in the Ministry of Agriculture demonstration centers and a third in the rural agricultural schools. Finally, the Health promoters will also have materials which could and should be used for accelerated basic training and to assure that health messages are widely disseminated.

The third step will be to conduct follow-up baseline studies of the needs and desires of non-INVIERNO communities. This step will be used over time to determine the coincidence or difference in the needs perceived by other communities. The findings are intended to serve as a means of ascertaining the extent to which the curricula developed in the INVIERNO communities can be adapted to other areas, and, more importantly, to determine whether or not it makes sense to try new areas before INVIERNO has the opportunity to develop some of its programs.

If the results are positive, INVIERNO and the MPE will organize new techniques to increase access to rural education and to accelerate the development process in Regions V and II.

i. Curriculum for Adult and Adolescent Education. Both curriculum needs and broadcast scheduling will be investigated as part of the baseline study carried out under the grant section of the grant/loan project. This survey will also provide information on socio/economic characteristics of the target audience and existing adult education curricula available from other institutions such as the Regional Agricultural Schools, INVIERNO, the National Agricultural Institute, the Ministry of Health, and MPE's own Adult Education Division. From these sources, and based on educational objectives derived from the needs assessment, a significantly expanded MPE adult education staff, aided by technical assistance, will develop sequenced radio messages.

ii. Curriculum Areas. As the study of possible alternatives for rural adults indicates (see PCI Report), there is a need for practical, process oriented adult education that can broaden agricultural skills and which can be immediately useful, such as instruction in basic health and nutrition practices, small-plot agricultural skills, basic reading, basic economic concepts and applied mathematics.

Technical assistance will be provided MPE to train a professional staff capable of designing, producing, and evaluating curriculum for adult education at the same time that they design and produce curriculum packages (taped lessons for broadcast, teachers guides, printed student work sheets) for adult education in the above mentioned major subject areas over a 5-year period.

Accelerated basic education is the foundation of the present MPE adult education curriculum. Numeracy and literacy in 3-years, the primary goal of the MPE, would continue to be a goal of the proposed new curriculum, but adaptation of the existing materials in these two important areas will be a thorough going re-working of lessons in content and sequence of material in order to produce meaningful, attractive broadcast lessons.

Lessons developed in the various subject areas will keep pace with each other, but because of the greater complexity of curriculum

development for adults, development of the full complement of subjects for an accelerated 2-year program will take 4-years (see Appendix J ).

iii. Number of Adult/Adolescent Educational Lessons. A baseline study will provide information as to the best hour of day and length of time for adult education broadcasts as well as the maximum number of times per week lessons should be broadcast and what subject areas are most in demand and most needed.

However, in order to estimate approximate costs of curriculum development for accelerated basic education, the following assumptions were made:

- Applied mathematics and basic literacy will require the most time to teach and should, therefore, be broadcast three times a week, or 120 lessons per year. Development of these lessons is spread over four years to allow sufficient time to prepare new reading and math lessons content which will relate to rural health, nutrition, family planning and agriculture/economic concerns.

- Although health and nutrition content will be included in the basic math and reading lessons, additional health, nutrition, and family planning lessons are needed, especially to meet the interests and needs of rural women. Therefore additional health and nutrition lessons are estimated at one (1) a week or 40 per year for a total of 160 specialized lessons covering a variety of topics.

- Agriculture information can be divided into general agricultural practices, cash-crop farming and animal husbandry for family use. Therefore, agriculture broadcasts are estimated at two a week or 80 per year, for a total of 320 broadcast lessons offering information in all three areas.

- Basic economics for the rural dweller includes financing and marketing practices, concepts of home cash management, investment and savings and other topics as they relate to the economic activities of men and women. Therefore, one basic economics lesson is to be scheduled each week for a total of 40 lessons per year. 240 lessons will be developed over four years to give a balanced presentation appealing to both men and women.

Guides and student activity sheets will also be provided for each lesson in all subjects.

iv. Delivery System for Adult Education. The delivery system for adult education will take the form of a radio forum, or half-hour broadcast followed by discussion or other appropriate monitored activities. Monitors of the radio-forums will be teachers salaried by MPE. They will be assisted in curriculum evaluation activities by INVIERNO Agromocs and health promoters.

Program participants who successfully complete the sequence of lessons in basic education and receive an acceptable score on a standardized literacy/numeracy test, will receive a certificate of 6th Grade equivalency from the MPE.

v. Delivery System for Rural Adolescent Centers (RACs). Adolescents and adults are grouped together under this activity although the curriculum delivery systems will be different for the two groups. The rural adolescent center (RAC) provides a semi-formal education program offering both formal course work and on-the-job training in agriculture (see Strengthening Rural Educational Delivery Systems). The curriculum in these centers overlaps projected adult education curriculum in at least three areas: agricultural practices, basic education (numeracy and literacy) and health/nutrition. However, broadcast times which might suit the out-of-school adult population, would be inconvenient for these centers which alternate 2-weeks in and 2-weeks out of school. Therefore, recorders and cassettes will be used in these schools to offer opportunity for more flexible scheduling. Tape duplicates of the radio broadcast lessons can be made at a relatively low cost, and cassette recorders will be provided to each of the RAC centers in Regions II and V.

(4) Materials. A major component activity, integral to curriculum development for both adults and primary students, is the production of materials related to the taped lessons.

Teachers' guides will be prepared in the form of a complete step-by-step plan for each lesson with suggested activities for followup. These guides will not be bound, but will be issued in loose leaf form each month at the supervisors' workshops for primary teachers. This system of printing and issuing lesson guides separately allows curriculum to be introduced into schools as soon as it is ready and also permits changes to be made easily.

Most taped lessons will also have accompanying student work sheets. Lessons addressed to all grade levels will have different work-sheets for each level.

c. Inputs and Budget

(1) GON Inputs

Personnel. Additional staff will be required in the following sections: Curriculum, Radio and TV, Primary Education, Materials Production, Agriculture Education, Adult and Non-Formal Education and Evaluation. MPE will provide 29 new staff members for the curriculum development team, in addition to 15 staff members presently working in the Masaya Radio Math Project. Cost of MPE personnel over the 5-year project period will be \$1,584,000.

Materials. MPE will also contribute a gradually increasing amount of the cost of curriculum materials - tapes, guides and work-sheets, assuming a greater proportion of the cost each subsequent year. Operating costs will be entirely MPE input.

Recurring Operating Costs. The combination of highly paid personnel qualified to continue the process of curriculum development plus extensive production of consumable student materials such as worksheets (giving the students for the first time something other than hand-copied notebooks for visual reference) will result in recurring operational costs of \$1,842,000 per year, which the MPE has agreed to provide.

(2) A.I.D. Funds

Personnel. Technical assistance will be needed in almost all curriculum areas, but particularly in broadcast script writing, reading and adult education. 24 person/years of technical assistance will be provided over the life of the project. Eighteen person months of this, consisting of two evaluation advisors serving three 3-month terms each, will be grant funded in order to emphasize the critical importance of evaluation. The remaining technical assistance in curriculum development will be loan funded. (See Annex J for financial details. Total cost A.I.D.: \$1,740,000. Funding: Grant, \$90,000; Loan, \$1,650,000.

Materials. Cost of broadcast tapes, guides and worksheets will be shared with the GON during the 5-year project period. Total cost A.I.D.: \$1,790,000. Funding: Loan.

(3) Component Budget

SOURCE OF FUNDS

(In U.S.\$000)

Uses of Funds	A.I.D.		GON	TOTAL
	Grant	Loan		
Technical Assistance	90,000	1,650,000		1,740,000
Operating Costs			1,747,000	1,747,000
Materials		1,790,000	1,685,000	3,475,000
TOTAL:	90,000	3,440,000	3,432,000	6,962,000

Total A.I.D. Funding: 3,530,000

d. Component Timetable (See Annex S)

e. Outputs and End of Component Status

(1) Outputs

Output 1.

Improved primary curricula for grades 1 - 4 which meets the needs of rural students ages 6 - 12. Curricula content will include the following areas: Mathematics, Reading, Agriculture, Health/Nutrition, and Social Studies.

Output 2.

Adult education curricula directly related to the job skill needs of rural adolescents and adults, based on data provided by MOH and INVIERNO and a comprehensive baseline study to be carried out under the Grant portion of this project. Curricula areas will include: Basic literacy and numeracy, agriculture, health and nutrition, and basic economics.

Output 3.

Training curriculum to prepare three groups of educators:

i. Supervisors and master teachers - a sequenced training to cover not only revised curriculum content but methods of supervision and assistance to classroom teachers.

ii. Regular and Comarca Teachers. Curriculum for two levels of training. Those with some normal school background and those without any teaching background, to cover curriculum content, methods of multi grade teaching (see Annex J), preparation of classroom materials, human growth and development, lesson planning, rural curriculum methods and human relations training as applied to community development and classroom teaching.

iii. Teachers of Adolescents and Adults. A training curriculum to cover not only techniques of radio-forum teaching, but curriculum evaluation and principles of adult education.

Output 4.

Teachers' guides, student worksheets, and tape cassettes to accompany each lesson developed for both primary and adult/adolescent education.

Output 5.

Evaluation of the effectiveness of the new curriculum, both in terms of summative evaluation involving pre and post testing to determine effectiveness of curriculum for an entire subject area and the developmental evaluation involving revision of individual lessons. Technical assistance will be provided to MPE to carry out the design and implementation of curriculum education as part of the curriculum development process. A written summative evaluation will be produced at the end of the first two years and at the end of the fifth year of the project.

(2) End of Component Status

(a) Improved primary curricula for grades 1 - 4 in use in primary rural classrooms in Regions II and V in INVIERNO - MOH communities.

(b) Adult education curricula being taught through radio broadcasts followed by community forum and/or tape cassette presentation in over half the rural communities reached by INVIERNO and the MOH.

(c) Supervisors, master teachers, regular and comarca teachers and adult education monitors using new methods of teaching in their educational activities in rural schools in INVIERNO and MOH communities.

(d) Primary and adult education lessons are broadcast on a daily schedule. The lessons are in use in EAC and CFER schools, and supervisors have duplicate sets of tapes available for lending to teachers.

(e) A written evaluation of the educational effectiveness of the new radio and tape cassette assisted curriculum.

4. Training for Supervision and Teaching (Component Four)

a. Background. A school system can only be as good as its teachers. However, the Education Sector Assessment has indicated that many rural schools are without teachers, and those teachers who are assigned to rural areas are in most cases poorly trained. Seventy-five per cent of the teachers in primary schools have the title "maestro de Educación primaria". One way of attaining this title is to complete six years of normal school training in addition to six years of primary education. However, in-service teachers with no degrees but with five years of training in professional training courses held on Saturdays and during vacations also fall in this category. Only 1% of all primary teachers have any university training. The present minimum normal school training required for primary teachers is three years; yet normal schools themselves have a relatively high percentage of failures and dropouts during the first two years, and the primary program curriculum is not taught until the third year.

Primary teachers earn a basic monthly salary of \$107 to \$121 U.S. (See Education Sector Assessment).

In addition to poor and insufficient training, few rural teachers have adequate support from the Ministry of Public Education. Books and teachers' guides are not available in numbers adequate for the student population; over 75% of rural schools do not have sufficient furniture; curriculum content is oriented toward urban students; and teaching methods emphasize rote learning. Supervision on the departmental level often takes the form of sporadic visits from the supervisor who collects attendance records and relays occasional administrative messages from the Central Office in Managua. Small wonder, then, that teacher absenteeism is high in rural areas and that 139 out of 979 schools in Regions II and V are presently closed due to lack of teachers.

This project activity proposes to meet the need for well-trained, committed teachers through a continuing program of pre-service and in-service orientation and training for supervisors, master teachers, regular teachers, and

Comarca teachers (for the Comarca School Circuit Schools is to be described below) who will teach in the restructured school system in Regions V and II. Teaching personnel from the rural adolescent training centers, EAG and CFERs who will be implementing the accelerated basic education radio-supported based curriculum to be developed under this loan, will also receive in-service training on the content and teaching methodology of the revised curriculum. Teachers are motivated to teach when they feel confident of their classroom skills, which is a major goal of this project component. (See Annex J Multi-Grade Teaching).

In the initial stages of the project, personnel will be drawn primarily from the present pool of primary teachers. However, as the number of schools in the program expand, new teachers will be added to the system. To assure that their pre-service training is relevant, teaching personnel from the four normal schools operating in Regions V and II will participate in a series of orientation and curriculum workshops. These workshops will also be open to personnel from the education departments of UCA and UNAN to keep them apprised of teacher training trends in the Ministry of Public Education. The inclusion of national and private University staff in these workshops will be a first step toward addressing the need for articulation and coordination of curriculum development programs at all levels of the education system.

b. Role of the National Education Center. In June of 1972, USAID Loan 524-L-027 provided funds for the establishment of the National Education Center. This center has been given responsibility for in-service training of personnel employed at the primary and secondary education levels, such as teachers, school directors, supervisors, and inspectors, in order to increase their ability to carry out proposed new changes in curriculum, teaching methodology and new administrative procedures; and to enable them to develop and carry out action oriented educational research, evaluation, innovations and experiments.

In accord with the purposes of this center, this project proposes to make use of both the physical facilities of the center and the teacher training curriculum the center is presently preparing under the World Bank Loan. The

24 trainers who will have the major responsibility for carrying out in-service training activities under this project will be considered part of the NEC staff.

Technical assistance will be provided not only to train the team of trainers, but to help the center design and carry out an adequate evaluation of the training aspects of the project.

c. Component Strategy.

(1) Training of Trainers. The first activity of this component will be to train a cadre of 24 teacher trainers and 100 supervisors who can carry out the necessary orientation and training or re-training of 2,200 rural education personnel in Regions II and V. All training under this project component is time-phased with the complementary activities of other components. As more local school committees begin to function, schools are repaired, new teachers assigned or Comarca School Circuit teachers selected, training of larger groups of teachers will take place each year.

Groups of schools will be brought into the new system according to the plan developed as part of the Administrative Reform. Part of the curriculum for this training is currently being developed by MPE's Curriculum Division with technical assistance provided under the World Bank Loan. Curriculum pertaining to other aspects of the activities required for the restructuring of curriculum and school administration in Regions V and II will be prepared under the curriculum sub-project of this loan.

Because the improvement of training and improvement of supervision are complementary activities, supervisors must not only be retrained, but their role must be redefined to include the training of others.

During the first year, 12 teacher trainers and 10 supervisors will be trained in intensive six week seminars to be held at the National Education Center in Managua. They will receive motivation and human relations training, and will learn group process methods as well as techniques of

multi-grade teaching, supervision, and method of teaching using radio-supported instruction. They will be taught how to use video-tape recorders and other audio-visual materials as teacher training tools.

Trainers will form part of the NEC staff, but they will carry out their training functions in the training locations selected in each department. These locations will be near enough to trainees' homes so that travel to and from workshops will not be costly and trainees may return home on weekends.

Normal Schools, Secondary Schools and Institutes with boarding facilities will be used for the training. MEP will be able to provide this type of facility in all departments of Regions II and V. No training group will have more than 20 members.

During the second year, the first 12 trainers plus 10 supervisors will train two additional trainers and 10 supervisors.

During the third year two more trainers and 10 supervisors will be trained in training methods. In the 4th year, four trainers and 24 supervisors will be trained to take care of the increasing numbers of teachers to be trained. In the 5th year, the last four trainers and remaining 46 supervisors will be trained.

Number of 4-Person Training Teams Functioning each year (Cumulative)

Year	1	2	3	4	5
	5	8	12	19	31

Upon completion of their training programs, the teacher trainers will be grouped in teams of 4 persons each. At least one full-time trainer will be in each team; other team members will be departmental supervisors.

The teams will perform the following functions:

(a) Train during periodic six week sessions other teacher trainers who will be needed as the program expands.

(b) Train during intensive 6-week sessions, master teachers in skills needed for administration of the Comarca School Circuits.

(c) Conduct initial 6-week orientation sessions for regular and comarca teachers, and 6-week follow up sessions for Comarca teachers after their first year's teaching experience.

(d) Conduct on-going training, in 2-week sessions, for regular and comarca teachers.

(e) Provide additional specialized and on-going training, in 2-week sessions, for teachers monitoring the Accelerated Basic Education Program, including EAC and CFER teachers. Some of these teachers will be primary school teachers. The specialized training is in techniques of adult education.

(f) Carry out 5-week re-orientation sessions for normal school personnel in Regions V and II.

Supervisors will perform additional functions as part of their specific role as supervisors:

(g) Once a month, one-day workshops will be held for the 20 teachers under each supervisor.

(h) Twice yearly, classroom demonstrations will be provided for each of the teachers they supervise.

(2) Training for Master Teachers. Over the five years of the project, 100 master teachers will be trained in techniques of teacher supervision/assistance, in-service training, new teaching methods, program evaluation and data gathering, materials preparation, and the administration of Comarca School systems.

Master teachers will be responsible for the quality of the teaching in each of the four Comarca schools under their supervision. The assistance to the Comarca teachers will include one classroom visit per week for observation,

demonstration teaching, and assistance with lesson plans and preparation of visual materials. They will also participate in the monthly group sessions conducted by supervisors for primary teachers.

Training for master teachers will take place in 6-week intensive workshops in the departmental capital cities and will be carried out by training teams composed of training staff members from NEC, departmental supervisors already trained under Output I and MEP Central Office advisors who will provide guidance in such areas as research and evaluation and new record keeping practices.

Number of Master Teachers Trained in 6-week Sessions Each Year

<u>Year</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>Total</u>
Master Teacher	-	6	20	40	34	100

(3) Training of Regular and Comarca Teachers. The third component task is the re-orientation of 1,477 regular teachers and initial training of 400 Comarca teachers and their on-going training over the period of curriculum development.

There will be no more than 20 teachers in each training group, and 4 trainers/supervisors will work with each group. Training sessions will be held as close to the teachers' community as possible, both to reduce costs and to provide a setting as close as possible to the one in which the teachers will work.

Decentralized supply points have been suggested as part of the administrative reform. Training held near the new departmental supply centers would provide an opportunity for teachers to learn how to use the new system.

Teachers' entry into the radio-supported rural education program will be spread over five (5) years, based on the completion of school repair and construction, curriculum development, and preparation and pre-testing of radio messages.

Each teacher will receive an initial 6-week orientation, which will be carried out by the training teams formed as part of Output 1. This orientation will include community development and group leadership training, and instruction in new teaching methods, to include the use of the new radio-supported curriculum, and methods of adapting curriculum to suit community and student needs. Community teachers, who for the most part, are literate laypersons with no teaching experience, will receive an additional 6 weeks follow-up training after their first year's teaching experience.

During each subsequent year of the program, the trainers will conduct 2-week curriculum workshops for all teachers actively participating in the program to date. These workshops will be held for groups not exceeding 20 teachers to give as much opportunity as possible for interaction between teachers and trainers. To augment the initial 6-week training, Comarca School Circuit teachers will also be visited once a week by the master teacher who will teach demonstration classes, assist with the preparation of weekly plans, and provide additional teaching materials to the Comarca teacher. The Ministry of Public Education will grant credentials to these comarca teachers based on criteria established by the Ministry so that it will be possible for a comarca teacher eventually to move up into the regular MPE teaching salary scale.

All teachers, regular, master and Comarca will also meet once a month for a 1-day workshop with their departmental supervisors (1 supervisor for every 20 teachers). In addition to providing an opportunity to impart new information to teachers, these workshops will provide a forum for teacher-feed-back and evaluation of the new curriculum

(4) Preparation of Teachers for Accelerated Basic Education (ABE)

Another training activity is the preparation of teachers who will monitor the radio forum accelerated basic education programs and teachers who will teach in the EAC/CFER schools (defined in Component 5).

Accelerated Basic Education (ABE) as presently carried out by MPE, is a literacy/numeracy program leading to Primary Certification for out-of-school persons 14 years of age and over. At present the program is carried out in urban primary schools during evening sessions. Teachers are drawn from the Division of Primary Education.

A modification of the Accelerated Basic Education Program is used in the rural adolescent education centers established by FUNDE, a private voluntary/organization, and the Ministry of Public Education (CFER/EAC).

The MPE intends to further extend these programs in rural areas through an adaptation of the basic primary curriculum for radio broadcast and the gradual development of a technical training curriculum to meet the needs of the rural population (See Curriculum Component). Each radio broadcast will be followed by a forum led by a MPE teacher who may occasionally be aided by an INVIERNO Agromoc or health promotor.

The Accelerated Basic Education Program will be established initially in communities already organized by INVIERNO technicians, who have requested this type of educational assistance. Teachers who are willing to accept teaching positions in this program will be salaried by the MPE. For teachers already teaching in the primary school, salary supplements will be provided.

Special additional training for both EAC/CFER staff and the ABE locality teachers will be provided by the training teams. The initial 2-week training sessions will broaden teachers' monitoring and group discussion skills and increase their capacity to assess community needs. Curriculum development in the technical skill areas of this program will build upon baseline data and training needs assessment carried out by local community teachers. Teachers participating in the Accelerated Basic Education Program will assume the following functions:

- (a) Student record keeping
- (b) Presentation of material to supplement radio broadcasts
- (c) Evaluation of student progress
- (d) Participation in community education needs analysis and goal setting
- (e) Feedback to curriculum development team

- (f) Cooperation with other agencies providing adult education services, such as the Ministry of Health and INVIERNO.

As each new curriculum area is developed, additional 2-week workshops will be provided for these teachers.

(5) Normal School Staff Training. While the first phases of this project will be carried out by the present corps of retrained primary teachers, additional teachers required by an expanded system will be drawn from the normal schools. To avoid costly repetition of training, it will be necessary to develop a permanent pre-service training capability within Nicaragua's normal school system to orient new teachers to the revised curriculum and delivery systems which will be introduced in Regions II and V. Thus, a series of workshops will be held to expose normal school professors in the four (4) normal schools in Regions V and II to the new methods, materials and curriculum being introduced into the system. Professors from the education departments of the two universities will also be invited to attend the normal school workshops so that their preparation of secondary normal school teachers can also reflect the new approaches to education.

These workshops will emphasize community leadership, lesson planning, multi-grade teaching of four (4) grades in one room, visual materials development, child growth and development, and principles of teaching and learning. Six week workshops will be offered in each of the four (4) normal schools in Regions II and V over the life of the project. An expected 40 to 60 professors will be trained.

d. Inputs and Budget:

(1) GON Inputs

The Ministry of Education will provide per diem costs for in-service training, calculated on the basis of \$5.00 per day times the total number of persons involved in the project each year and the average number of training days received. MPE input will also include incremental salaries of trainees, and transportation for training teams. The estimated GON counterpart under the training component is \$1,770,000. Detailed cost estimates are provided in Annex K. Recurring annual costs of \$525,000 will continue to be met by the MPE subsequent to Project completion.

(2) A.I.D. Inputs

While all training of teachers and supervisors will be done by MPE personnel, technical assistance will be needed during the first phases of the project to train the trainers. Other inputs include materials and equipment for training and per diem costs of teacher workshop participation. The National Education Center's present efforts in devising a teacher training curriculum under the World Bank Loan will provide a base for this project's activities in teacher training. The World Bank will have provided technical assistance to the National Education Center to develop training curriculum for primary school administration and supervision, primary teacher training and student evaluation. USAID will, in addition, provide 72 person/months of technical assistance for human relations training applied to community development and education, radio-supported teaching methods, and adult education teacher training. The estimated cost is \$360,000. Other USAID training costs include video tape recording equipment and tapes. These training costs amount to \$42,000.

(3) BudgetSOURCE OF FUNDS

(In U.S. \$ 000)

<u>Use of Funds</u>	<u>A.I.D. (Loan)</u>	<u>GON</u>	<u>TOTAL</u>
Technical Assistance	360,000	-	360,000
Materials and Equipment	42,000	-	42,000
Operating Costs	-	1,770,000	1,770,000
	<hr/>	<hr/>	<hr/>
TOTAL:	402,000	1,770,000	2,172,000
	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>

e. Component Timetable (See Annex S)

f. Outputs and End of Component Status

Output 1

The first output is a trained cadre of 24 teacher trainers and 100 supervisors who can carry out the necessary orientation and training or re-training of 2,200 rural education personnel in Regions II and V.

Output 2

One hundred master teachers will be trained in techniques of teacher supervision/assistance, in-service training, teaching methods, program evaluation and data gathering, materials preparation and the administration of Comarca School Systems.

Output 3

The third output is the re-orientation of 1,477 regular teachers and initial training of 400 Comarca teachers, and their on-going in-service training over the period of Curriculum Development.

Output 4

The fourth output is the specialized training of 1,100 teachers for the Accelerated Basic Education Program. Training will take place in centralized localities within each region.

Output 5

The fifth output is the training of normal school staff capable of providing pre-service training in the skills and knowledge required by the restructured primary system and the rural primary curriculum adapted for radio presentation.

End of Component Status

- (1) A trained cadre of teacher trainers, based in the

National Education Center, is conducting teacher training workshops in Regions II and V.

(2) Supervisors in Regions II and V are actively assisting with teacher training, administering the restructured primary schools in their departments, and providing in-service support for education teachers.

(3) Master teachers in the Comarca system are providing assistance and guidance to Comarca teachers as planned.

(4) Regular and Comarca teachers are trained in the use of radio-based curriculum and other skills necessary to the improvement of rural education and are functioning at an improved level in rural schools.

(5) Teachers are trained to teach accelerated basic education and are conducting classes for adults and adolescents in both the EAC/CFER centers and in the rural schools.

(6) Normal school staff members are trained in the new teacher training content and are putting it to use in their normal school classes.

5. Strengthening Rural Educational Delivery Systems (Component Five).

a. Background. The rural educational system in Nicaragua suffers from a lack of adequate infrastructure to efficiently deliver relevant educational services to the rural poor. Many rural communities in Regions II and V have no schools. It has been estimated (PCI Report) that approximately 40,000 children in these regions have no access to primary schooling due to the lack of schools. Two-thirds of these children come from the departments of Matagalpa and Jinotega in Region V.

Even if a school exists it does not mean that it will be providing educational services to the local children. Often there are no teachers due to the lack of management capability and/or financial resources on the part of the MPE. In 1976 there were 139 primary schools in Regions II and V where there were students and a building but no teacher.

In some cases the school buildings are in need of major repair and therefore are closed until the repairs can be made. Most of these repairs require substantial inputs of frequently unavailable human and financial resources. In 1976, a survey was undertaken by the MPE to determine the condition of existing rural primary schools in Regions II and V. (Summary of the Study in the PCI Report). The following table is a summary of the school repair needs in the rural areas.

Table 1

PHYSICAL STATUS OF EXISTING RURAL PRIMARY SCHOOLS

<u>Description</u>	<u>Region II</u>	<u>Region V</u>	<u>TOTAL</u>
Operating Schools	341	390	731
Closed Schools	82	166	248
Available Classrooms (Operating and Closed)	866	611	1,477
Schools in Need of Repair	162	235	397
Schoolrooms in Need of Repair	272	258	530

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Of the available classrooms in Region II, 31% are in need of major repair. In Region V, 42% of the available classrooms are in need of the same repair, with major repairs including but not limited to the following: Putting on a new roof, replacing a wall that is safety hazard, laying a cement floor, etc.

An additional problem in the rural schools is that the classrooms do not have sufficient furniture for the number of students that attend classes. Some classrooms are without furniture while others have only 50% of the desks and chairs they need. Table 2 provides a summary of furniture availability in the rural areas.

Table 2

FURNITURE AVAILABILITY IN RURAL PRIMARY SCHOOLS

<u>Description</u>	<u>Region II</u>	<u>Region V</u>	<u>Total</u>
Classrooms w/o Furniture	189	179	368
Classrooms with only 50% of the needed furniture	549	212	761

Over 80% of the available classrooms in Region II are without school furniture or have only 50% of the desks and chairs that they need. The problem is equally acute in Region V where 64% of the classrooms are without adequate furniture.

The MPE has no institutionalized maintenance program which goes to explain, at least partially, the large number of schools in need of repair. Maintenance of existing rural schools is virtually non-existent. Where a major repair is required, the MPE usually contracts with the Ministry of Public Works (MPW) to perform the repair. This is often a time consuming process for even urban schools, with rural schools actually receiving very little assistance from either MPE or MPW. Minor repairs do get done but only if the teacher takes pride in his/her teaching environment.

Component Five will address the major infrastructure constraints that hinder the delivery of rural educational services. In addition, this component

will deal with the human resources needed to complement the new and improved infrastructure and the mechanism through which the adapted curriculum will be transmitted to the rural areas, that is, by radio. This major component has seven activities which will be described in detail below.

b. Activity A - Comarca School Circuits (CSC)

(1) Description. Comarca School Circuits (CSC) will be established in areas where rural primary schools are nonexistent and needed. It is estimated that approximately 100 circuits will be established. On the average, each circuit will have four classrooms. Therefore this activity will finance the construction of 400 classrooms. (See Annex "L" for detailed costs of classrooms, house and furniture).

In addition to building classrooms, the CSC will provide a house for the master teacher. The house will be the property of the MPE and be located in one of the communities in the CSC. The provision of the house, along with the 10% pay differential, are essential for the success of the Comarca system, as it provides incentive for the master teacher to live and stay in the community. Since the Comarca community teachers are chosen from within their communities, they are also expected to constitute a reasonably stable project element.

The selection of the CSC will be a coordinated effort between the MPE supervisors, MPE central office personnel and the promoters (MPE, INVIERNO, MOH) working in the rural areas. As a condition precedent to any primary school construction or repair activity, the MPE will gather data on the location of communities without schools, student population density, accessibility to a central location, etc. Through this process, areas will be chosen for CSCs. Each Comarca school will have a coverage radius of 2 - 4 kilometers depending on the geographical layout and student population of the area. It is estimated by the end of the project that each Comarca classroom will have 50 students. A student density of this magnitude is justified in Annex G where the average number of primary school aged children has been determined for INVIERNO served communities.

(2) Inputs and Budget. Inputs to Activity A will be financed from two sources: The MPE budget, and the A.I.D. loan. Inputs by source and the estimated budget for activity A are as follows:

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(a) A.I.D. Inputs. The A.I.D. loan will finance 70% of the CSC materials construction costs using the Fixed Amount Reimbursement method of disbursement. All construction cost figures have taken into account the cost of the management firm that will coordinate construction activities (See Section IV. D.) and the cost increases due to inflation. Total construction costs that will be financed by A.I.D. are estimated at \$2,240,000.

(b) GON Inputs. The GON will finance 30% of the construction cost for each CSC. This includes the cost of the classrooms and the master teachers' house. The MPE will contract with a local management firm to handle all construction activities (See Section IV.D). It also will be responsible for monitoring the activities of this firm. It is estimated that the MPE will contribute \$960,000 to the construction of 100 CSCs over a five-year period.

In addition, the GON must supply the Master Teachers and pay the LSC - chosen community Comarca teacher. This represents an increase in MPE personnel of 500 people which will require a budget outlay of \$975,000 over the life of this project, and will require a recurring outlay of \$492,000 per year thereafter, which the MPE has agreed to provide.

(c) Activity Budget

<u>Use of Funds</u>	<u>A.I.D.</u>	<u>GON</u>	<u>TOTAL</u>
Construction	2,240,000	960,000	3,200,000
Operating Costs	-	975,000	975,000
	<u>2,240,000</u>	<u>1,935,000</u>	<u>4,175,000</u>

(3) Activity Timetable. The following schedule illustrates an incremental rate of implementation under this activity. This timetable assumes that: (1) local school committees have been formed on schedule and have requested a school, (2) appropriate CSC areas have been identified, and (3) a school maintenance plan has been adopted by MPE.

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<u>Description</u>	<u>1st Year</u>	<u>2nd Year</u>	<u>3rd Year</u>	<u>4th Year</u>	<u>5th Year</u>	<u>Total</u>
Number of CSCs	-	6	20	40	34	100
Number of Class-rooms	-	24	80	160	136	400
Number of Class-rooms	-	6	20	40	34	100

(4) Outputs and End of Activity Status.

(a) Outputs. The major outputs expected under this activity are 100 Comarca School Circuits that have the infrastructure necessary to provide relevant education to the local communities.

(b) End of Activity Status. Students in Regions II and V are receiving an education whereas previous to this loan educational services were not available to them due to the fact that they lived in isolated communities.

c. Activity B - Improving Existing Rural Primary Schools.

(1) Description. The GON/A.I.D. rural education strategy is to extend education into previously unserved areas and improve the quality of the primary education in existing schools. The majority of the schools that will be assisted under this loan come under this second category, improving existing rural schools.

As was demonstrated in the background section of this component, a significant number of schools in Regions II and V are in need of repair. A 1976 MPE study of school repair needs shows that the majority (60%) of the approximately 750 schools operating in the area have been constructed by the local communities ( Annex T ). A.I.D. has only funded sixty (8%) of these schools and much of that construction was done in cooperation with the Ministry of Public Education. If these schools are to continue serving the rural areas they must be brought up to acceptable standards.

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This activity will address the poor condition of the large number of rural schools. In addition, this activity will bring about permanent funding on the part of the GON to supply teachers in the 139 primary schools in Regions II and V which do not have teachers. This is also considered be an improvement of existing rural primary schools as it makes the physical facility a functional entity. The possible need to provide additional incentives for regular teachers to teach in rural areas will be studied under the Administrative Reform Component of this project.

(2) Inputs and Budget

(a) A.I.D. Inputs. A.I.D. will loan finance 70% of the material costs for repair and reconstruction. As in the case of the Comarca construction, all major repair work will be contracted out through a private construction management firm. The Architectural and Engineering supervision and inspection costs are included in the costs of construction. These repair and reconstruction costs are estimated at \$1,188,000.

(b) GON Inputs. Thirty percent of the costs for repairing and reconstructing existing schools will be financed by the GON. It is estimated that these costs will amount to \$508,000. The GON will also finance 139 new regular teachers who will work in the schools that do not have a teacher at the present time. The MPE realizes that improved salaries and benefits for regular teachers working in rural areas must be an important part of its rural education program; they have agreed to finance a projected annual recurring cost hereunder of \$252,000.

(c) Activity Budget.

<u>Use of Funds</u>	<u>A.I.D.</u>	<u>GON</u>	<u>TOTAL</u>
Repair and Reconstruction	1,188,000	508,000	1,696,000
Operating Costs	-	846,000	846,000
TOTAL:	1,188,000	1,354,000	2,542,000

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(3) Activity Timetable. Classrooms will be repaired based on the following timetable. It is assumed that LSCs will have been formed to formally request GON/A.I.D. resources and that all conditions precedent to this activity have been met.

<u>Description</u>	<u>1st Year</u>	<u>2nd Year</u>	<u>3rd Year</u>	<u>4th Year</u>	<u>5th Year</u>	<u>Total</u>
Classroom Repaired or Reconstructed	-	60	120	190	160	530

(4) Outputs and End of Activity Status

(a) Outputs. Improved school facilities will be the major output of this activity.

(b) End of Activity Status. By upgrading the physical condition of existing classrooms in the rural areas it is projected that the local teacher will be able to present educational material to the students in a more congenial learning environment. In addition, communities will be able to use these facilities for local social activities and meetings.

d. Activity C - Furnishing New and Existing Primary Schools.

(1) Description. The lack of adequate desks and chairs in rural primary schools was discussed in the introductory material for this project component. The majority of schools in both Regions II and V do not have the school furniture needed to handle the number of students which attend classes. Students sit on the floor for their lessons with some paying little attention to the teacher and other actually leaving the classroom to play outside.

Furnishing include tables and chairs, a teacher's desk, a blackboard and the transportation cost to get the materials to the school. Based on local prices for these commodities, the Ministry of Public Education has estimated that it will cost on the average \$340 to furnish each new Comarca schools and existing primary schools. It will cost \$170 per school for these schools which have 50% of the needed furniture. (For more detailed see PCI Report).

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Furnishings can be provided from at least three sources: (1) the community, where the furnishings are made by local persons with carpentry skills; (2) local carpentry shops which could be contracted to do the work; or (3) Ministry of Labor vocational schools which teach carpentry as an occupational skill and have produced school furniture for the MPE in the past. Given the large number of tables and chairs that will be needed under this activity, the MPE will most likely contract with a number of different entities. Preference will be given to competent local craftsmen in order to generate income producing employment in the rural areas.

(2) Inputs and Budget

(a) A.I.D. Inputs. The A.I.D. loan will finance all furnishing costs for new and existing rural primary schools. The estimated cost of this activity is approximately \$398,000.

(b) Activity Budget

<u>Use of Funds</u>	<u>A.I.D.</u>	<u>GON</u>	<u>TOTAL</u>
School Furnishings	398,000	-	398,000

(3) Activity Timetable. Classrooms will be furnished based on the following timetable. This schedule is dependent upon the completion of the Comarca schools, the repair of existing rural schools and the formation of LSCs.

<u>Description</u>	<u>1st Year</u>	<u>2nd Year</u>	<u>3rd Year</u>	<u>4th Year</u>	<u>5th Year</u>	<u>Total</u>
New and Existing Classrooms w/o Furniture	-	54	100	260	354	768
Existing Classrooms where Furnishings are 50% Incomplete	-	50	100	260	351	761

(4) Outputs and End of Activity Status

(a) Outputs. Adequately furnished school facilities will be the major output of this activity.

(b) End of Activity Status. By increasing the quantity of tables and chairs within the primary schools, it is projected that the local teacher will be able to more effectively present educational material to the students.

e. Activity D - Ongoing School Maintenance

(1) Description. A major factor that contributes to the large number of rural schools needing repair is an inadequate or nonexistent school maintenance program. Teachers often take it upon themselves to repair their classrooms; but due to constraints such as money and carpentry skills, only small, minor repairs ever get done.

The local school committees will be responsible for the upkeep of their schools under the new GON strategy. However, the communities need a fund from which to draw the necessary financial resources to make the repairs and replace or buy new furniture. As the LSCs become more informed of their responsibilities and begin to operate as dynamic community organizations, it is hoped that eventually more of the financial responsibility for maintaining schools will fall on the LSC. At present, and for the planable future, however, the MPE must play the major financial role.

Under the Administrative Reform component of this program, a construction/maintenance advisor will work with the MPE in establishing a school maintenance plan for the primary schools in Regions II and V. The plan should be ready for implementation early in the second year of the program and its implementation will be a condition precedent to all school construction and repair activities under the loan. A proposed maintenance plan is included in Annex L.12. This plan provides maintenance fund to each school on a per student basis with 10% of all schools receiving major financial assistance each year for major repair. Estimates for the maintenance funds were made based on this proposed plan. The MPE and USAID expect that substantial modifications will take place when a maintenance

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plan is formally adopted and implemented by the MPE. Nevertheless, it provides a mechanism for estimating reasonable budget levels for this activity over the life of the project.

(2) Inputs and Budget

(a) GON Inputs. The GON will provide a line item in its budget beginning in the second year of implementation of this project for maintenance of existing schools. These funds will be disbursed in accordance with the MPE's School Maintenance Plan. It is estimated that the plan will be funded with \$955,000 over the life of the project and entail annual recurring costs thereafter of \$255,000. All such maintenance costs will be financed by the GON.

(b) Activity Budget

<u>Uses of Funds</u>	<u>A.I.D.</u>	<u>GON</u>	<u>TOTAL</u>
School Maintenance	-	955,000	\$ 955,000

(3) Activity Timetable. Funds will be available for school maintenance over the life of the project as follows:

<u>Description</u>	<u>1st Year</u>	<u>2nd Year</u>	<u>3rd Year</u>	<u>4th Year</u>	<u>5th Year</u>	<u>Total</u>
School Maintenance Budget Line Item	-	225,000	230,000	245,000	255,000	\$955,000

(4) Outputs and End of Activity Status

(a) Output. The principal output of this activity will be an institutionalized mechanism through which rural schools can receive financial assistance to maintain their school buildings.

(b) End of Activity Status. An operating school maintenance program will help the LSC in maintaining rural schools, thereby reducing the number of schools that need to be closed due to a dilapidated physical structure or inadequate school furniture.

f. Activity E - Educational Support and Service

(1) Description. Inefficient educational support from supervisors and central office personnel has often been cited as another major problem in rural education in Nicaragua. Supervisors cannot reach many of the isolated communities because they lack adequate transportation. Central office personnel often have an urban orientation because they do not have ready access to the countryside.

Thirty-five 4-wheel drive vehicles will be purchased under the A.I.D. loan for supervisory use on a shared basis. Five 4-wheel drive vehicles will be purchased for the MPE central office staff, three for the Department of Investments and two for the Non-Formal Education Division, where the community development activities will be monitored. The Department of Investments will use the vehicles for regular building inspection trips to Regions II and V.

An additional form of transportation financed under this loan is the acquisition of twenty mules for use by the supervisors in the most isolated areas, primarily in Region V. Four-wheel drive vehicles will not have access to many of the Comarca School Circuits or even to some of the existing rural primary schools. Mules will facilitate educational supervision especially in these areas and hopefully reduce rural teacher isolation.

An additional MPE support activity will be the provision of school garden kits to rural primary schools. An integral part of the GON/A.I.D. educational strategy is to provide students relevant educational experiences that will impact upon their daily lives. School gardens will provide a supporting aid for teaching the health/nutrition and agriculture curriculum in the Comarca and existing rural schools. These gardens will be developed with the cooperation of the INVIERNO Agromocs and the MOH promoters. These individuals will also be available to be guest teachers, using the school garden or its produce as their subject and/or teaching aide.

When the local school committee and the local teacher have decided to establish a school garden, the LSC can ask that the MPE deliver to them a tool kit with the necessary agricultural implements to cultivate a garden. These implements include shovels, rakes, hoes, machetes, etc.

(2) Inputs and Budget. Inputs to Activity E will be financed from two sources. GON budget allocations to the MPE and the A.I.D. loan. Inputs by source and the estimated budget for Activity E are as follows:

(a) GON Inputs. The GON will finance the increased number of supervisors that will be needed to support and service the extended and improved rural education system. Thirty-two new supervisors are programmed into this activity. In addition, all operating costs of the programmed vehicles (except the mules) will be financed by the GON. The mules will be maintained by local school committees whose communities are accessible by a four-wheel drive vehicle and located near schools which are not accessible by a vehicle. Total operating costs for this activity over the five-year period of the loan are estimated at \$1,042,000, to be followed by annual recurring costs of \$258,000 which the MPE has agreed to provide.

(b) A.I.D. Inputs. The A.I.D. loan will finance the purchase of 40 four-wheel drive jeep-type vehicles at an estimated price of \$7,000/vehicle. These vehicles will be procured and delivered to the field and central office staff over the first three years of the project. Total motorized vehicle cost is estimated at \$280,000. The mules (20) will be purchased locally during the second and third years of the project. It is estimated that the twenty mules will cost \$7,000.

The garden kits will be distributed after the school has been built or repaired, and is operational. Gardens will be most relevant when the agriculture and health/nutrition curriculums begin to be used in the primary schools in 1979. Estimated cost of the A.I.D. financed garden kits is \$187,7000 with each kit costing \$100.

<u>Use of Funds</u>	<u>(c) Activity Budget</u>		
	<u>A.I.D.</u>	<u>GON</u>	<u>TOTALS</u>
Garden Kits	188,000	-	188,000
Vehicles (including mules)	287,000	-	287,000
Operating Costs	-	1,042,000	1,042,000
	<u>475,000</u>	<u>1,042,000</u>	<u>1,517,000</u>

(3) Activity Timetable. This timetable assumes that local school committees are actively involved in the educational process and that the conditions precedent for this activity have been met.

<u>Description</u>	<u>1st Year</u>	<u>2nd Year</u>	<u>3rd Year</u>	<u>4th Year</u>	<u>5th Year</u>	<u>Total</u>
Number of School Kits Distributed	-	200	477	600	600	1,877
A.I.D. Financed Motorized Vehicles in the Field	14	11	15	-	-	40
New MPE Supervisors Working in Regions II and V	10	10	12	-	-	32

(4) Outputs and End of Activity Status

(a) Outputs. There will be two major outputs under this activity. The first will be an improvement in the service and support of rural educational programs on the part of the MPE's supervisors and central staff. Secondly, the school garden kits will facilitate learning by providing an environment where learning by doing can be the teaching methodology in some subject areas.

(b) End of Activity Status. Supervisors and Managua-based staff will be assisting to a greater degree in the rural areas, thereby improving the quality of basic education being received by the rural poor. In addition, the school gardens, through what is learned in agriculture and health/nutrition by the students, will have a positive impact upon the nutritional habits of the rural populace.

g. Activity F - Rural Adolescent Centers

(1) Description. The need to increase adolescent literacy and numeracy was demonstrated in an earlier section of this paper. To complement the basic primary educational program, the MPE is proposing that the present inadequate system of rural adolescent centers be greatly expanded and improved. The purpose of these centers is to provide an environment where rural adolescents (ages 14 - 20) can live and learn basic skills that are relevant and applicable to their occupations when they return to their rural environment. The RAC curriculum concentrates on six major subject areas: (1) Agriculture, (2) Rural Marketable Skills (e.g. carpentry, vehicle maintenance, etc.), (3) Home Economics, (4) Community Organization, (5) Basic Education (e.g. basic literacy and numeracy) and (6) Health Education.

The essential features of the RAC model have been sufficiently tested in Nicaragua so that this expansion can go ahead without extended experimentation. The model for the RACs was developed by FUNDE (Fundación Nicaraguense de Desarrollo) with assistance from the French Rural Development Mission. The first CFERs (Centros Familiares de Educación Rural) opened in 1973. At present there are eight CFERs functioning in Nicaragua, but only two of these centers are located in Regions II and V. The Ministry of Public Education also operates eight EACs (Escuela Agrícola del Campesinado), but only three are in Regions II and V. The Ministry of Agriculture and the MPE provide staff and materials for the centers. FUNDE monitors the CFERs and the EACs are operated directly by the MPE.

Evaluation of the CFER/EAC model has pointed out the following advantages this approach has for adolescent education:

(a) Participants come from communities within 25 km. of the centers. Generally they are children of owners or renters of small

agricultural properties (10 manzanas or less). Nearly half are illiterate when they begin the program.

(b) The program lasts two years, with the school calendar arranged so that the students attend when they are least needed for farm work at home.

(c) A system of "alternation" provides one to two weeks study at the center followed by one to two weeks at home practicing what was learned at school and sharing this learning with the family.

(d) During the period at home the center's monitors visit the family, reinforce the application of the new skills, and consciously involve the parents in the learning and the curriculum design.

The major difference between the CFERs and EACs is that the EACs put more emphasis on teaching job skills that require a workshop (e.g. carpentry, mechanics). The CFERs concentrate on more basic skills and knowledge such as agriculture, home economics and basic education, and less on rural marketable skills. Therefore, the EAC is a more sophisticated operation with higher quality buildings and equipment. The CFER is more rustic and is often located in the smaller communities. The two types of centers have integrated programs because those students that graduate from a CFER often transfer to an EAC for a limited time period to gain those additional job skills the EAC offers. Therefore, the CFER frequently serves as a feeder school to the EACs.

Both centers are multi-functional and are used by the local community for meetings and celebrations. For a center to be built in a particular town the community must formally request that it be a recipient and demonstrate a willingness to actively support and monitor its operation. The community must also provide the land on which the center will be constructed.

(2) Inputs and Budget

(a) MPE Inputs. The MPE will finance 30% of the construction costs which is estimated at \$324,000. This covers the construction of six (6) CFERs and six (6) EACs. The major MPE cost under this activity

will be the staffing requirements of these centers. Personnel and operating costs, to be totally financed by the MPE, are estimated at \$954,000 over the life of this project. They have also agreed to fund the recurring operational costs of \$318,000 per year.

(b) A.I.D. Inputs. The FAR method will be used as the reimbursement technique. A.I.D. will finance 70% of all construction costs which is estimated at \$756,000. In addition A.I.D. will cover all furnishing and equipment costs of these new centers which amounts to \$189,000.

(c) Activity Budget

<u>Use of Funds</u>	<u>A.I.D.</u>	<u>GON</u>	<u>TOTAL</u>
Construction	756,000	324,000	1,080,000
Equipment and Furnishings	189,000	-	189,000
Operating Costs	-	954,000	954,000
	<u>945,000</u>	<u>1,278,000</u>	<u>2,223,000</u>

(3) Activity Timetable. This timetable assumes that sufficient communities have requested CFERs or EACs to be located in their town and that these communities are willing to support their operations. Successful compliance with the conditions precedent for this activity are also assumed to have been met.

<u>Description</u>	<u>Date</u>
Sites selected for three new EACs and three new CFERs.	December, 1977
Construction of the six centers is completed and the centers are equipped and furnished.	January, 1979

<u>Description</u>	<u>Date</u>
Sites selected for three additional EACs and three CFERs.	January, 1979
The first group of centers are staffed by the MPE and Ministry of Agriculture and are operational.	February, 1979
Construction of the second set of centers is completed and the centers are equipped and furnished.	January, 1980
The second set of centers are staffed by the MPE and Ministry of Agriculture and are operational.	February, 1980

(4) Outputs and End of Activity Status.

(a) Outputs. The major outputs of this activity are six newly constructed EACs, and six newly constructed CFERs. Overall, six EACs will be added to the three existing in Regions II and V. An additional six CFERs will complement those two that are already functioning in the target areas.

(b) End of Activity Status. As a result of the larger number of RACs in Regions II and V, rural adolescent will have greater access to skills and knowledge relevant to their daily lives. Increased numbers of students participating in the RAC programs and applying their acquired skills in their work will indicate the success or failure of this activity.

h. Activity G - Radio Transmitting and Receiving

Capability

(1) Description. The MPE has chosen radio as one of the primary transmitting mechanisms for delivering the adopted curriculum to the rural area. Given the geographically dispersed nature of the rural population, radio forms a key part of the most effective means through which to channel educational services. Although the human factor of the teacher also remains pivotal, most

rural primary teachers do not have the educational background or training to be particularly innovative in regard to the types of materials and lessons they prepare. Therefore, quality teaching assistance from other sources is an improvement over what is being offered at the present time. The visual materials aspect has been covered in the Curriculum Component.

The Masaya Radio Math Program, partially financed by A.I.D./W/TAB has shown that radio-supported education can be a major improvement over traditional teaching methods. Results of the first evaluation of the Masaya program shows that children learning math with the radio-supported curriculum test 25% higher than those students learning by traditional method (See Annex J.5). It is recognized that mathematics is a subject for which a radio-supported curriculum can be more easily developed than a subject such as language arts (reading, writing). Nevertheless, the MPE and A.I.D. are confident that all the programmed subjects can be developed given the lead times involved and the adaptive nature of the curriculum.

All educational-based radio programs in Nicaragua face one major constraint in their efforts to reach their target group. Large blocks of time for educational purposes are not available on either the commercial or governmental stations. Commercial stations are willing to sell time but a time block of 1 - 2 hours is the maximum available. The powerful (100 KW) governmental radio station, Radio Nacional, can only provide up to three hours a day because of its other programming commitments.

Even if Radio Nacional, or some other powerful radio station, were available, the MPE strategy under this program precludes their long term use. The MPE considers rural education as proposed in this program to be somewhat region specific. The announcers, financed under the curriculum development component, must be from Regions II and V. The agricultural information that is transmitted must also be as region specific as possible. For these reasons a single large transmitter was ruled out as an alternative.

Under this program the MPE is planning to install two radio stations. One will be located in Jinotega (Region V) and the other in Masaya (Region II). Each station will have 10 KW of power output and broadcast in the AM frequency. The Jinotega station will become operational in December, 1978 and

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begin broadcasting lessons in February, 1979. The Masaya station will be brought on line in December, 1979 and will begin broadcasting for Region II in February the following year. The Masaya Radio Math Program will be absorbed into this program.

From February 1978 till February 1979 in Region V and February 1980, the MPE will purchase commercial time for broadcasting the curriculum that will be developed. After February 1980 sufficient curriculum will be developed to necessitate a separate radio transmitting capacity for the MPE. Region II is being phased in to the program at a slower rate than Region V because of the coordinated strategy with INVIERNO and MOH who will not be involved in Region II until that time.

MPE and A.I.D. technicians traveled throughout Regions II and V to determine the transmitting requirements for a MPE station or stations. The results of their field strength measurements are presented in Annex V. The measurements shows that the mountainous terrain of Region V does not act as a major obstacle for radio transmissions as was originally thought. Region II is less mountainous and the technicians saw no problem with receiving an adequate signal in any community in this area.

Preliminary discussions have been carried out between the MPE and the Director of Communications in regard to available frequencies and the general regulations that govern the broadcast media. The channel available for use under the MPE/A.I.D. project is 1,580 KH2 near the end of the band. Another possible channel would be 780 KH2 but this would only be used for the Jinotega station and then only if Costa Rica does not object because a Costa Rican signal does reach Region V at this frequency. The Director of Communications felt that both channels could be used in this program.

In addition to transmitting capability, the primary schools will need radios for every classroom involved in this project. Past experience in Nicaragua under the Masaya program demonstrates that schools take good care of their radio equipment. Under this program the teachers will have the day-to-day responsibility of the radios while the LSC will assume the responsibility of replacing the batteries or the radio should it be damaged beyond repair.

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(2) Activity Inputs and Budget

(a) MPE Inputs. The MPE will finance the operating costs of the two radio stations. Detailed calculations of operating costs have been included in Annex L.10. It is estimated that these recurring expenses will be \$180,000 per year per station. The total cost over the life of the project is \$927,000. In addition, the MPE will purchase the two parcels of land for the station and build the two buildings where the offices and studies will be housed. The estimated costs of the land is \$20,000 and the two buildings will cost approximately \$60,000.

(b) A.I.D. Inputs. All radio transmitting and receiving equipment will be financed with A.I.D. loan funds. Annex L. 9 provides a detailed breakdown of component costs for the installed radio station equipment. With inflation and contingency factors included, the total cost of the two stations is \$450,000 or \$225,000 for each installation. A.I.D. will also finance the purchase of approximately 2,000 radio/recorders at a unit price estimated at \$80,000. These units will be distributed to each rural classroom and to the EACs and CFERs participating in the accelerated basic education program. The radio/recorder combination will provide flexibility for the teacher in case he/she misses a lesson or the radio transmitter breaks down. Blank tapes will be made available through the master teacher and a master set of tapes will also be available so that any particular lesson can be recorded. The estimated cost of these radio/recorders is \$160,000. The extra tapes have been budgeted under Component Three.

(c) Activity Budget

<u>Use of Funds</u>	<u>A.I.D.</u>	<u>GON</u>	<u>TOTAL</u>
Land	-	20,000	20,000
Buildings	-	40,000	40,000
Operating Costs	-	927,000	927,000
Equipment			
Radio Stations	450,000	-	450,000
Radio/Recorders	160,000	-	160,000
	<hr/>	<hr/>	<hr/>
TOTAL:	610,000	987,000	1,597,000
	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>

(3) Activity Timetable

<u>Description</u>	<u>Date</u>
Bids submitted for turn-key design and installation of two, 10 KW radio stations.	January, 1978
Land purchased by the MPE in Jinotega and Masaya.	May, 1978
First group of MPE radio technicians returns from training.	August, 1978
Jinotega station operational with staff.	December, 1978
Programming begins in Region V over MPE.	February, 1979
Second group of MPE technicians returns from training.	August, 1979
Masaya station operational with staff.	December, 1979
Programming begins in Region II over MPE radio station.	February, 1980

(4) Outputs and End of Activity Status

(a) Outputs. The major outputs of this activity will be two, 10 KW radio stations transmitting educational programs to Regions II and V. In addition, there will be receiving capability in the rural primary schools for these educational programs.

(b) End of Activity Status. The radio stations will become a focal point for the GON's integrated rural development strategy as information from participating Ministries, and other agencies active in these two regions, can be broadcast through these stations. More specifically, the radio transmitting and receiving capability will serve as the teaching mechanism for reaching

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the rural poor with a relevant, basic curriculum which will provide them with the basic skills and knowledge needed for a more productive life.

i. Summary Budget. GON, A.I.D. and community funding can be summarized in the following manner for Component Five, Strengthening Rural Educational Delivery Systems.

	<u>Activity</u>	<u>A.I.D. (Loan)</u>	<u>GON</u>	<u>TOTAL</u>
A.	Comarca School Circuits	2,240,000	1,935,000	4,175,000
B.	Improving Existing Rural Primary Schools	1,185,000	1,354,000	2,542,000
C.	Furnishing New and Existing Primary Schools	398,000	-	398,000
D.	Ongoing School Maintenance	-	955,000	955,000
E.	Educational Support and Services	475,000	1,042,000	1,517,000
F.	Rural Adolescent Centers	945,000	1,278,000	2,223,000
G.	Radio Transmitting and Receiving Capability	610,000	1,007,000	1,617,000
	TOTAL:	5,856,000	7,571,000	13,427,000

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PART IV. ANALYSIS OF SECTOR PROGRAM

A. Financial Plan and Analysis

1. Financial Plan and Timing. Based on the Component Budgets shown in Section III. B. above - as further detailed and supported in Annexes I, J, K, and L - it is expected that A.I.D. grant and loan and GON counterpart resources will be allocated to the sector program approximately as follows:

Summary Cost by Project Inputs

(In U. S. \$000s)

<u>Component</u>	<u>A.I.D.</u>		<u>GON</u>	<u>Total</u>
	<u>Grant</u>	<u>Loan</u>		
1. Administrative Reform and Management Improvement	770	210	775	1,755
2. Integrated Community Development	120	92	361	573
3. Curriculum Development & Related Materials Production	90	3,440	3,432	6,962
4. Training for Supervision and Teaching		402	1,770	2,172
5. Strengthening the Rural Education Delivery System				
a. Comarca School Circuits		2,240	1,935	4,175
b. Improving Existing Schools		1,188	1,345	2,542
c. Furnishing New and Existing Schools		398	-	398
d. School Maintenance			955	955

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<u>Component</u>	<u>A.I.D.</u>		<u>GON</u>	<u>Total</u>
	<u>Grant</u>	<u>Loan</u>		
e. Education Support and Service		475	1,042	1,517
f. Rural Adolescent Centers		945	1,248	2,223
g. Radio Education Delivery		<u>610</u>	<u>1,007</u>	<u>1,617</u>
Sub-Total		<u>5,856</u>	<u>7,571</u>	<u>13,427</u>
Total	<u>980,000</u>	<u>10,000</u>	<u>13,134</u>	<u>23,134</u>
Gran Total		<u>10,980</u>	<u>13,909</u>	<u>24,889</u>

The rural education project to be financed will be dynamic and it is expected that both opportunities and problems will arise during the implementation period. For this reason, up to five percent of the loan amount will be available for re-allocation in accordance with project purposes.

Based upon GON-AID estimates, previous experience and the approximate Component Timetables shown in Section III. B. above, it has been determined that five years is a reasonable period in which to implement a program of this complexity and magnitude. The program will thus be executed in calendar years 1977 through part of 1982.

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Summary Cost Estimate by Cost  
Components  
 (000s of US\$)

	<u>A.I.D.</u>		<u>GON</u>	<u>Total</u>
	<u>Grant</u>	<u>Loan</u>		
Technical Assistance	675	2,010	-	2,685
Special Studies	100	-	-	100
Training	130	110	-	240
Commodities and Materials	-	3,696	1,860	5,556
Construction Services	-	4,184	1,872	6,056
Personnel and Operating	75	-	10,177	10,252
Total	980	10,000	13,909	24,889

Of the above amounts shown as GON counterpart, approximately \$11,542,000 should be considered as an increment to the present MPE budget. This amount represents the amounts shown for commodities and materials and construction services. In addition, approximately \$7,810,000 of the amount shown for personnel and operating represents an increment to the MPE budget since it represents the salaries of the 700 new teachers and supervisors, the salary increase in administrative and management positions, per diem and travel expenses for the teacher trainees, new maintenance of school facilities and other increases for new personnel and supplies needed for the project.

(Disbursement Schedules are in Annex U)

## 2. Historical Budget Analysis

Detailed budgets and explanations for the MPE during the period 1972-1977 are presented in Annex N and provide the supporting data for the historical budget analysis.

The MPE budget has increased from C\$ 156 million in 1972 to C\$ 338 million in 1977 representing an absolute increase of 117% (C\$ 7 = US\$ 1). This increase corresponds to an average annual growth rate of 16.7%. This rate of growth has exceeded the combined effects of both inflation and population. The real average annual growth rate per capita for the period 1972-1977 is 2.7%. In 1972, the MPE budget fell to 14.3% of the GON budget. This lower relative amount is due primarily to the increased debt servicing as a result of the 1972 Managua earthquake and an increase in external funding for non-education projects. The MPE budget remains the largest of all the GON Ministries.

The below table shows the line budget items for the MPE in 1972 and 1977.

	<u>MPE BUDGET</u>				<u>% Change</u>
	<u>1972</u>		<u>1977</u>		
	<u>C\$ 000s</u>	<u>%</u>	<u>C\$ 000s</u>	<u>%</u>	
Central Administration	2,070	1.3	4,016	1.2	94
Planning and Assessment	859	.6	2,455	.7	185
Primary Education	86,470	55.5	153,560	45.5	78
Secondary Education	22,987	14.8	61,725	18.3	168
Ag. Education	2,005	1.3	4,311	1.3	115
Physical Education	963	.6	2,481	.7	158
Industrial Arts	1,136	.7	3,507	1.0	208
Labor Training	-	-	7,217	2.2	-
Cultural Extension	2,491	1.6	3,624	1.1	45
Higher Education	13,601	8.7	38,155	11.3	180
School Construction	21,146	13.6	24,287	7.2	15
Capital Transfers	2,014	1.3	32,175	9.5	1400
<b>Total</b>	<u>155,742</u>	<u>100.0</u>	<u>337,513</u>	<u>100.0</u>	<u>117</u>

Primary Education, which includes the staffing and operations of the urban and rural primary (Grades 1-6) schools and adult literacy programs charts in the largest category in the budget. However, this category has made a relative decline in the 1972 - 1977 period. In 1972, this category accounted for over C\$86 million or 55.5% of the total MPE budget. In 1977 Primary Education rose to C\$ 154 million, but declined to 45.5% of the total MPE budget, a relative decline of 10% in the five year period.

In contrast to the relative decline in Primary Education, Secondary Education and Higher Education the next two largest operating budget categories have experienced relative increases in the period 1972-1977. Secondary Education has increased from C\$23 million to C\$62 million with a relative increase of 3.5% of the total MPE budget. Higher Education has increased from C\$14 million to C\$38 million with a relative increase of 2.6% of the total MPE Budget. Nationwide, both Secondary and Higher Education enrollments have increased more rapidly than Primary Education enrollments.

The MPE budget classified by current and capital expenditures is shown in the below table.

	<u>1 9 7 2</u>		<u>1 9 7 7</u>	
	<u>C\$ 000</u>	<u>%</u>	<u>C\$ 000</u>	<u>%</u>
Current	132,216	84.8	278,525	82.5
Capital	23,526	15.2	58,980	17.5
Total	<u>155,742</u>	<u>100.0</u>	<u>337,513</u>	<u>100.0</u>

As the amounts indicate the mix of capital costs to current costs has increased only slightly from 1972 to 1977. During the intervening period however, capital costs were considerably higher due to the reconstruction of the Managua schools.

The MPE budget, divided into personnel, operating and capital costs is presented below.

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	<u>1972</u>		<u>1977</u>		<u>% Change</u>
	<u>C\$ 000</u>	<u>%</u>	<u>C\$ 000</u>	<u>%</u>	
Personnel	109,420	70.3	213,946	63.4	95.5
Operating*	25,169	16.2	66,148	19.6	163.0
Capital	<u>21,153</u>	<u>13.5</u>	<u>57,369</u>	<u>17.0</u>	171.2
	<u>155,742</u>	<u>100.0</u>	<u>337,513</u>	<u>100.0</u>	

\* Includes grants and transfers to non-public school and institutions some of which are included as capital costs in the current/capital budget expenditure analysis above.

The above table shows a more favorable mix of personnel costs to operating expenses. This ratio was 4.3:1 in 1972 and decreased to 2.9:1 in 1977. The increase in personnel costs is due to a greater number of employees (9,235 fixed positions in 1972 vs. 13,701 in 1977) and salary increases. The increase in operating costs is in part of reflection of the general inflation during the period, but far exceeds this inflation. This indicates that the MPE is putting more emphasis on providing the materials and supplies to operate more effectively.

The following table shows average monthly salaries for various classes of MPE employees. These averages are based on samples taken from the MPE fixed position listing. These amounts do not include vacations and other allowances and benefits.

<u>Employee Classification</u>	<u>1972</u>	<u>1977</u>	<u>% Change</u>
<u>Administrative</u>			
Program Directors	C\$3,690	C\$3,950	8.5
Section Chiefs	2,135	3,025	41.7
Collaborators	1,306	1,305	(0.0)
Secretaries	990	1,024	3.4
Typists	503	681	16.8

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	<u>1972</u>	<u>1977</u>	<u>% Change</u>
<u>Operating</u>			
School Directors	723	1,007	39.3
Asst. Directors	671	902	34.4
Teachers (Primary)	715	769	7.6
Teachers (Secondary)	2,400	2,400	0.0
Inspectors	963	1,075	11.6

The average MPE salary has increased 63% from 1972 to 1977. However, as can be seen from above, only a small amount of this increase has come from general salary increases. Most of the increase is due to a greater mix of higher paid employees, most notably the secondary school teachers. Not one of the above employee classes has kept up with inflation during the five-year period 1972-1977.

In summary, the historical MPE budget analysis shows that:

The MPE has the largest budget of any GON Ministry and accounts for 14.3% of the total GON budget for 1977.

The MPE budget has grown more rapidly than the combined inflation/population effect with a real per capita growth rate of 2.1% per year for the period of 1972-1977.

Primary Education is the largest budget item in the MPE budget, but has declined from 55.5% to 45.5% of the MPE budget during the period 1972-1977. In contrast, both Secondary and Higher Education has made relative increases.

The 1977 budget shows a more favorable mix of personnel to operating expenses than the 1972 budget (2.9:1 for 1977 vs. 4.3:1 for 1972).

- (e) Salary increases for MPE employees have not kept up with inflation and appear inadequate.
- (f) Although the average MPE salary increased 63% from 1972 to 1977. This increase is due mostly to a greater mix of higher-paid employees, most notably secondary school teachers.

3. Financial Impact of Project on MPE

(a) Project Cost. As noted in Section B.2., the increment to MPE budget for counterpart expenditures is estimated at \$11,542,000.

The anticipated time-phasing of this increment by MPE budget classification is shown below:

MPE Counterpart Budget Increments  
(000s US\$)

<u>Budget Item</u>	<u>Total</u>	<u>Y E A R</u>				
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Central Administration	675	225	225	225	-	-
Planning & Assessment	2,712	85	207	293	657	1,470
Primary Education	4,374	125	412	671	1,448	1,718
Ag. Education	954	-	106	212	318	318
School Construction	1,872	-	253	445	675	499
School Maintenance*	955	-	225	230	245	255
<b>Total Increment</b>	<b>11,542</b>	<b>433</b>	<b>1,430</b>	<b>2,076</b>	<b>3,343</b>	<b>4,260</b>

\* New budget line item required by the loan agreement.

The average annual rate of growth for the MPE budget to provide this incremental counterpart is 1.71% at the current budget level. Since the historical rate growth of the MPE budget is 16.7%, the provision for adequate counterpart funds should not be very difficult.

(b) Recurring Costs. The recurring costs analysis assumes that the activities established during the life of the project will be continued at their anticipated levels (i.e., no replication in the other regions.) As noted in sub-section (a) above, GON counterpart funding rose, steadily during the life of the project. During the fifth year of the project, the incremental counterpart requirement is expected to amount to \$4,260,000. The annual estimated recurring costs to MPE is shown below.

MPE Recurring Cost Analysis  
(000s of US\$)

<u>Project Activity</u>	<u>Annual Recurring Costs</u>
Administrative Reform	225
Integrated Community Development	81
Curriculum Development and Related Materials	1,842
Training for Supervision and Teaching	525
Strengthening the Rural Education Delivery System:	
(1) Comarca School Circuits	492
(2) Improving Existing Schools	252
(3) Furnishing New and Existing Schools	-
(4) School Maintenance	255
(5) Education Support and Service	258
(6) Rural Adolescent Centers	318
(7) Radio Education Delivery System	<u>360</u>
Sub-Total	1,935
Total	<u><u>4,608</u></u>

To maintain the various project activities, the MPE will have to provide \$4,608,000 annually beyond the current MPE budget level. In addition, any inflation after the project life must also be considered. The anticipated recurring costs by MPE budget classifications is shown below.

(c) Replication Cost. The replication costs analysis is an attempt to determine the cost to the MPE of expanding the project activities nationwide (i.e., outside of Regions II and V.) It should be noted, however, that since this is a rural education project, the assumed expansion is only to those rural areas outside of Regions II and V. No urban expansion is assumed.

The basic assumption used in the replication costs analysis is that the per capita rural education costs which are estimated for Regions II and V hold for the other rural areas of the country. The only project element which was not calculated on this basis is the Radio Education Delivery System since it is more dependent upon geography than population. The determination of replication costs has also assumed a five-year implementation period similar to the project. These costs would be somewhat changed if shorter or longer implementation period were used. Annex V shows the replication costs of the various project activities (assuming no inflation during the replication period which begins immediately after the project period.)

If the project were to be replicated nationwide, at year 10, the MPE budget would be incremented \$12,251,000. To meet this increment, would mean that MPE budget must be increased on an average of 2.3% in each of the first ten years following the project initiation. As noted in Section B.2., the historic MPE budget growth rate is 16.7%. Therefore, the completion, maintenance and replication of the project activities by the MPE appears reasonable at this time.

B. Economic Analysis of Program

1. Macroeconomical Analysis.

a. Summary. (For detailed Analysis see Annex Q ).

Nicaragua's overall economic picture at the end of 1976 is bright, and prospects for 1977 are good. The country enjoyed both trade and balance of payment surpluses in 1976, due primarily to high prices for its cotton and coffee exports and to a slow down in imports. The local private sector has been cautious about making new investments, but increased domestic savings and lower import expenditures have enabled Nicaragua to reduce somewhat its short-term foreign debts. The Government, moreover, has negotiated over \$200 million in new loans during 1976 from international, governmental and private lending institutions. Nicaragua's debt service ratio, with regard to export, though creeping upward, remains manageable. A squeeze, however, may come toward the end of the decade unless both Nicaragua's public savings and balance of payments situation continues to improve and international money and commodity markets remain favorable. The coffee blight discovered in late 1976, if not controlled, could hit export earnings from that commodity in 1978 and beyond. On the fiscal side, the Central Government's revenues continued their moderate rate of increase, but fell short of the 1976 estimates of revenues needed to finance an ambitious public investment program. Central Government expenditures were more or less on target.

b. Availability of Funds for Counterpart

Given the GON's tighter fiscal situation, we have examined carefully the potential current account surpluses of the Central Government to assure the availability of counterpart to this program. Most counterpart will be

in the form of new operating (i.e., current) costs, and is considered to draw on the surplus in the sense that it would increase current expenditures and reduce the surplus:

<u>GON (C\$ Million)</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>
1) Current Revenues <u>1/</u>	1,695.2	1,898.6	2,126.4	2,381.5	2,857.8
2) Current Expend <u>1/</u>	1,413.3	1,554.3	1,710.1	1,881.1	2,069.2
3) Current Balance before loan	281.9	344.0	416.3	500.4	788.6
4) Counterpart to loan <u>2/</u>	3.0	10.0	14.5	23.4	29.8
5) <u>4) as % of 3)</u>	1.0%	2.9%	3.5%	4.7%	3.8%

1/ Revenues projected at 12% average annual increase, and expenditures at 10% (before the loan); rates are based on recent historical trends, and current tax structure.

2/ Counterpart here includes only new increments to operating expenses:

<u>Budget Item</u>	<u>Total</u>	<u>Y E A R</u>				
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Central Administration	675	225	225	225	-	-
Planning & Assessment	1,470	83	209	293	657	1,470
Primary Education	4,374	125	412	671	1,448	1,718
Ag. Education	954	-	106	212	318	954
School Construction	1,872	-	253	445	675	499
School Maintenance	955	-	225	230	245	255
U.S.\$ Total (000)	11,542	433	1,430	2,076	3,343	4,260
C\$ Total (millions)	80.0	3.0	10.0	14.5	23.4	29.8

As can be noted, the counterpart is a very small fraction of the estimated surplus, and taking into account the high priority the GON is giving to integrated rural development, as demonstrated by their support of INVIERNO and PRACS (health) programs, we can safely assume that both the capacity and the will exist to allocate the necessary funds to this project. This is confirmed in the letter soliciting the loan of US\$10 million for rural education (see Annex E).

2. Debt Service Capability. In general terms, the GON is maintaining their debt service within manageable proportions as compared to exports (i.e., the generation of foreign exchange). High world market prices for export crops have permitted the GON some breathing space in this regard, as the table below indicates:

<u>Nicaragua: Debt Service/exports ratio</u>				
<u>(US\$ millions)</u>				
		<u>1975</u>	<u>1976(p)</u>	<u>1977(e)</u>
1.	Exports goods	376	541	651
2.	Est. Exports non-factor services	55	60	65
3.	Total Exports	431	601	716
4.	Debt Service	59	84	104
5.	4 ÷ 3 =	13.7%	14.0%	14.5%

Source: Central Bank for exports; USAID Estimates and other. Note, however, that despite significant increases in exports, debt service payments are rising slightly faster. The GON has begun to pay off large commercial borrowings negotiated in 1973 and 1974. Although, they contracted over \$100 million from commercial and export banks in 1976 terms tended to be somewhat softer, and some borrowing was for consolidation of debts, and other loans potentially for export product financing. New lines of credit for road building equipment exceeded \$60 million.

The weight of debt servicing is being felt more heavily as diversion of central government resources rather than as diversion of foreign exchange. As the table below shows, interest and amortization of central government internal and

external borrowing will absorb 18% of total expenditures in 1977 due in part to the central government's absorption of public banks' debts (BNN).

Nicaragua: Central Government Debt Service

	<u>1975</u>	<u>1976</u>	<u>1977</u>
Interest as % current exp.	15.5%	13.7%	14.9%
Amortization as % capital exp.	13.0%	18.0%	22.5%
Total Debt service as % total exp.	14.4%	15.7%	18.0%

Source: Table , plus interest data from Central Bank.

The GON has tightened its current spending for 1977 in order to cover interest payments; only absolutely essential new positions were to be established. It also continues to seek concessional financing wherever appropriate. Debt service is expected to stabilize below 18% of exports over the next few years and then increase more slowly in absolute terms, as the average demands are offset by debt consolidation. Furthermore, interest payments to A.I.D. are a relatively small share of total public sector interest payments (under 6% in 1977) and the same is true of amortization of A.I.D. loans compared to total amortization (under 4% for 1977). The GON has historically been concerned about its credit image with donor agencies, has sought to make timely payments and is expected to continue to do so with this loan.

3. Internal/External Efficiency

a. Internal Efficiency

(1) Introduction

As detailed in the sector assessment, the formal Nicaraguan education system, particularly the rural schools, have very low efficiency, caused by high drop-out and failure rates, as well as a bulky and expensive administrative system. The fact that 96% of rural first grade

enrollees never finish sixth grade (AED, p. 42) and that drop-out costs in the first three grades alone account for 68% of national allocations to education indicates that past methods of achieving the old goal of universal access to primary education are expensive, unproductive and ultimately wasteful for a developing country. In Nicaragua, it recently was taking over forty pupil years to produce one sixth grade graduate, an efficiency rate of .15 (AED, p. 121). This loan program is designed to attack some of the causes of failure and desertion to support a new goal of assuring completion of basic education for the largest possible share of the rural population. The Integrated Rural Development Program (described in Section II A) is directed toward reducing other factors affecting drop-outs. The first project component is aimed at reducing administrative inefficiencies.

(2) Reducing Desertion Rates

There are three types of constraints to completing basic primary school in the rural areas:

(a) The sheer physical difficulty of daily school attendance by a highly dispersed population with migratory customs, limited roads, often inclement weather and frequent illnesses.

(b) The cost and opportunity cost to a family of a child or adolescent in school and therefore not available for work on farm or in the home; and yet requiring school supplies, clothes and food; and

(c) Low motivation on the part of the parent, potential students and teachers due to:

- inadequately equipped schools
- little clearly relevant curriculum
- high absenteeism (on part of teachers and students)
- little pay, support or supervision from MPE
- no sense of community participation, and therefore, interest
- most importantly, often limited opportunity for employment and/or increased production once education is complete.

In other words, if a family manages through sacrifice, to overcome the first two kinds of problems, and actually start a child in first grade, the child may never have a proper desk, receive appropriate information in a skillfully presented manner, or indeed even see the teacher on a regular basis.

There is sufficient evidence that rural families have the will to better their children's future by at least attempting to send them to school, despite constraints noted in (1) and (2). The high level of enrollment in first grade is an indication of that strong will, and of a better-late-than-never attitude among very impoverished families. Thus, if the GON can correct some of the problems noted in (3), and stop the deterioration of the educational process, we can assume a much improved completion rate, and efficiency ratio. Correction measures to be taken under this rural education program respond, point by point, to these problems:

- Improved and better utilized physical facilities, including existing structures now inadequately equipped
- reoriented curriculum for rural areas
- incentives (housing, opportunities for additional income by teaching adults) for master teachers in rural areas
- better refresher training and constructive supervision of teachers
- integration of teacher and community through organization of the latter
- use of auxiliaries and radio technology in remote areas where master teachers could not be induced to go traditionally

The final point of (3) above -- lack of employment or production opportunities -- cannot be addressed within just this loan program, but, uniquely, in Nicaragua, this is to be addressed by the broader integrated rural development program, particularly those INVIERNO activities already begun by the GON. These activities are to provide agricultural inputs, and more on-farm and off-farm employment.

These ongoing rural development activities in Region V of Nicaragua, are the basis for our assumption that the ultimate disincentive to school attendance (un-employment) can be removed or at least reduced, and pave the way for lower desertion and greater internal efficiency.

Although the combine effects of all these improvements on current desertion and repetition rates may still be only arbitrarily measured, we suggest an initial goal of improving the rural primary efficiency ratio from .15 (as tentatively calculated in the sector assessment) to .40 for Region V, or fifteen pupil years used to produce a sixth grade finisher. A Region V - specific baseline study will be conducted to verify the actual efficiency ratio for that region, and the initial goal adjusted if necessary.

(3) Making Administration more Efficient

The complement to decreasing desertion and failure rates to improve internal efficiency, is to strengthen the administration of educational services provided. Constraints have been described in the Administrative Reform section of this paper and can be summarized as: overcentralization of decision-making, inadequate data, weak coordination (internal and external), poor supervision and support. The measures needed to correct these problems tend to be either 1) planning or 2) implementation oriented. Planned improvements in the information systems and evaluation process is directed toward better planning, while the conversion of the current inspection system to a true "supervision" system and the upgrading of the MPE staff's professional qualifications through training and management assistance are both directed at better implementation. The proposed streamlining of the MPE decision-making process, by reducing the number of department heads and decentralizing decision-making, is aimed at both planning and implementation. We predict that this will better the output (well-planned and administered educational services for rural population) at the same or reduced costs, and thus increase efficiency.

b. External Efficiency

Much has been said of "relevance" and of the difficulty of measuring it, but, therein lies most of the determination of external efficiency. An educational system (formal, non-formal, and work-related) must be designed to supply

the human resources necessary to meet national and individual development needs, in the quantities needed. Both versatility and high productivity are essential characteristics of an efficient labor force, (including self-employed producers).

The GON has no general manpower inventory nor a manpower development element in their national plan. However, the concepts are understood, awareness and concern is expressed by GON officials, and initial human resources planning programs are underway. A new Human Resource Division in the Ministry of Labor is still essentially urban and industry-oriented but is developing skills at projecting manpower needs, and devising short-term training responses. An inventory of all research in employment is also being prepared for national planning as a basis for future manpower planning. The sector assessment reviewed supply and demand of human resources for three sectors: education, health, and agriculture. Not surprisingly, they noted shortfalls of health professionals and certain middle level agricultural technicians, and an underutilization of teachers trained.

This program -- intended to provide basic (primary) education to two age groups <sup>2/</sup> -- will not impact on external efficiency as immediately as a strictly vocational training program. Nevertheless, it is intended to provide to the rural population a basic education with content that can help increase productivity for those ages engaged in economic activity or soon to be, and improve health and nutrition habits for all ages. It will also provide the essential basic education to permit people to go and study more job-related skills. If we confine our analysis to the rural poor, and do not accept the assumption that they would automatically benefit from the trickling down of modern sector growth, then we may not want to just improve efficiency of the economy of "society" as a whole, but rather seek to give priority to those professionals which directly service the rural poor. This program includes an element to train and equip with new technology those rural teachers (and new community) who will most directly service the target population. Other A.I.D. loans are simultaneously preparing agricultural and health promoters also dealing with the target group. Thus we hope to bias the improvements in

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<sup>2/</sup> "basic" signifies numeracy, literacy and primary level certification, with content of these and additional subjects stressing rural health, nutrition and agriculture. The age groups are 6 to 14 years and 14 and over.

external efficiency of the Nicaraguan learning system in favor of the rural poor.

External efficiency can also be improved through better utilization of existing human resources. Through greater employment and production increase opportunities. The core of Nicaragua's rural development experiment is to create a situation where out-puts of one element become inputs of another. In the case of education and agriculture, the link is double: better education can provide skilled workers/farmers needed for rural production, and the increased production opportunities in turn can generate more highly motivated students. As Harbison recently hypothesized, <sup>1/</sup> "priority should be given to expansion of formal education in those areas where concentrated efforts are already being made to bring about broadly based rural development, where progress is being made in raising agriculture incomes, expanding small-scale industry and commerce, and improving the infrastructure of roads and "communication". This education element is part of a broader rural development program in Nicaragua which seeks to improve efficiency of an entire sector (rural) by reducing bottlenecks to utilization of all resources, and ultimately increasing rural incomes.

#### 4. Cost Effectiveness Analysis

##### a. Introduction

Inputs into this proposed education program include activities for construction, equipment, curriculum development including radio programming and materials, teacher training, and inputs for community organization. These inputs will be translated into programs intended to alleviate problems of planning, urban oriented rural primary education, lack of trained teachers, and maintenance as set forth in the project description (Part III). The end of project status against which the costs of this project must ultimately be evaluated in terms of economic viability are increased competency, improved retention of students, increased access to schools by students, improved performance of teachers and supervisors, and better facilities.

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<sup>1/</sup> Frederick Harbison "The Education - Income Connection" Paper prepared for Princeton - Brookings Income Distribution project, November 1974.

Given the experimental nature of this project, final EOPS cannot be quantified with a degree of certainty that allows firm comparisons of the cost-benefit ratio or cost-effectiveness of this project versus alternative, more traditional forms of educational expansion and improvement. However, the delivery mechanism chosen for this project was based upon the experience of the Stanford/AID Radio Mathematics program in Nicaragua. Careful analyses based on the costs of that program against present educational costs actually being incurred by the educational system indicate that the proposed system will be cost-effective.

In this section we examine three comparisons between estimated project costs and costs of the present system in order to demonstrate the economic viability of the project and suggest an approach that can be refined and used in the ongoing evaluation of the program. They are tests of: (1) the cost-efficiency of using radio technology in already existing classrooms; and (2) the cost-effectiveness of reading additional students through the Comarca circuit mechanism.

b. The Stanford/AID Radio Mathematics Program

Preliminary evaluations of the program have been undertaken by Stanford and their findings are used in this economic analysis wherever appropriate. Because of the experimental nature of the Stanford project, U. S. technicians were deeply involved in the design and development of instructional radio programs. Evaluation assumed a larger than normal role and the group of students receiving instruction was much smaller than the potential region-wide student body proposed in this education loan. Therefore, owing to economies of scale, unit costs appear higher in the pilot project evaluations than they are assumed to be when applying this mechanism on a broader scale. With greater use of Nicaraguan technicians and less intensive evaluation, all indications are that costs of the radio delivery system will continue to decline.

To summarize program results, the technology used in the Stanford project resulted in significantly higher student achievement than that of traditional schools. For 1975, mean post-test scores for the experimental group of 571 students were 25% higher than a control group of 438 students. Some cost-saving changes were instituted in 1976, following evaluation of the 1975 results; there was some falling off in achievement and further evaluation is being conducted.

This method of estimating costs demonstrates the major economies of scale in the program. For example, one course given to 10,000 students for a 180 day school-year results in an annual per pupil cost estimate of \$16.18 for the program. 1,800 half-hours of programming delivered to approximately 90,000 students (as envisioned by the proposed program) would result in an annual cost per pupil of \$8.37 if the same costs applied. It is expected that future costs will be lower as the MPE develops the technology to produce radio programming. However, a cost of \$8.37 per pupil will be used in this analysis as representing a reasonable long-run cost estimate for the program. Both the financial plans of this project paper and the Leslie and Jamison study are based on data generated by the Stanford/AID Radio Mathematics Program and comparable GON cost data. As a result, although the economic analysis presented here was not derived in total from financial tables in this paper (which were developed simultaneously) the general costs in both sections correspond. See Annex W.

c. Cost-Efficiency of Radio Instruction

Improving retention and performance of students is a major objective of this project. The cost of radio programs and equipment as well as the retraining of teachers is an additional input over and above the cost of operating existing rural schools. By using the assumption that four completed years of education is generally required to achieve literacy <sup>2/</sup> we have a concrete, though somewhat arbitrary, performance criteria against which to measure the increased efficiency in the proposed system as against the present one.

For the present system, the Nicaragua Education Sector Assessment (AED) shows that due to high repetition and drop-out rate, 24.6 pupil years are required to produce one student with a fourth-grade education (AED, p. 120). Of the 20.6 excess student years, 15 percent is due to repetition (ESA, p. 124). That is, an average 3.1 years of repetition occurs per fourth grade graduate. The average cost per pupil enrolled in primary school for 1974 was \$53.69 (AED, p. 133).

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<sup>2/</sup> UNESCO A System of Education Indicators, December 1974

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According to the deflator index for National Product, costs have risen approximately 12% since 1974. Adjusting by this index, the present average cost per pupil enrolled in primary school is estimated at \$60.13 per year. A reasonable estimate of the cost of repeating grades in the present system can be safely assumed at \$186.40 per fourth-grade graduate. In all likelihood this cost is higher due to the fact that many drop-outs occur as a result of grade failure.

By assuming that the marginal costs of keeping a student repeator in a classroom an additional year is approximately equal to the average cost per primary pupil given above, a comparison can be made between the potential savings to the primary education system of the proposed program and the cost of adding the proposed program to that system. That is if students learn more quickly, and better, they are less likely to fail each grade, and thus improve retention rates will result for any given standard.

The table below quantifies reduced wastage possible and estimates savings for potential increases in performance.

(1) Percent reduction of repetition	(2) Years repetition avoided per 4th grade graduate <u>(1) × 3.1</u>	(3) Savings per 4th grade graduate <u>(2) × \$60.13</u>
.25	.78 yrs.	\$ 46.90
.20	.62	37.28
.15	.47	28.26
.10	.31	18.64
.05	.16	9.62

If educational standards for passing a grade remain constant, only a 5% reduction in repetition rates would be necessary for the program costs (estimated at \$8.37 per student by 1981) to be more than offset by savings in the system. Evidence on radio education presented in Part III of this paper supports the conclusion that the proposed program as presently designed can operate at a higher efficiency than 5% and therefore meets cost-efficiency criteria.

d. Cost-Effectiveness of the Comarca School Circuit Method.

The Comarca system is intended to reach additional students as opposed to expanding the traditional system into sparsely settled isolated areas. The relative educational efficiency of this system cannot be measured until after the program has been in operating for some time. However, access to educational instruction would be the same for both the Comarca and a traditional system even though teacher quality will be lower in the former. Tables 4 and 5 below show the derivation of annual per student costs for a Comarca system and a traditional system. Although these are rough cost estimates, they include almost all of primary school costs. The traditional system includes incentives such as housing for master teachers and teacher incentive pay in order to (1) make it comparable to Comarca System and (2) overcome the problem of attracting normal school graduates to teach in rural areas. A Comarca area is assumed to have a potential of 50 students per classroom or 200 per Comarca area.

Table 4

Comarca System: Cost per StudentA. Salaries:

Supervisor Cost; \$300/mo x 1/4 x 12 mo	=	\$ 900	
Community Teachers; \$60/mo x 4 x 12 mo	=	2,880	
Master teacher; \$170/mo x 1 x 12 mo	=	2,040	
Total		<u>\$ 5,820</u>	
		÷	<u>200</u>
Annual Salary Cost per Student			\$ 29.10

B. Transport: No provision

Supervisor Cost; \$20/mo x 1/4 x 12 mo	=	\$ 60	
Master Teacher; \$15/mo x 1 x 12 mo	=	<u>180</u>	
		240	
		÷	<u>200</u>
Annual Transport Cost per Student			\$ 1.20

Brought Forward \$ 30.30

C. Capital Cost: \*

4 School buildings; \$5,500 x 4	=	\$ 22,000
1 Teacher's building; \$9,500 x 1	=	\$ 9,500
Total		<u>\$ 31,500</u>

Annual cost of capital assuming 30 year life, 7.5% interes. rate		\$ 2,667
	÷	<u>200</u>

Annual Capital Cost per student \$ 13.33

D. Estimated delivery cost of radio program per  
student based on Stanford Math. Program \$ 8.37

Comarca System cost per student per year \$ 52.00

Capital costs of General Education of Master Teacher and Supervisor excluded. They are a very small percent of costs when annualized. The 7.5% interest rate is chosen to maintain comparability with estimates based on the Leslie and Jamieson studies.

Table 5

Traditional System with Incentives to Induce Teachers into Comarca Areas.

A. Salaries:

"Master " Teachers \$170/mo x 4 x 12 mo	=	\$ 8,160
	÷	<u>200</u>

Annual salary cost per student \$ 40.80

B. Transport: No costs incurred.

Brought Forward \$ 40.80

C. Capital Costs:

4 school buildings \$5,500 x 4	=	\$22,000
4 teachers buildings \$9,500 x 4	=	38,000
		<u>\$60,000</u>

Annual cost of capital assuming 30 year life, 7.5% interest rate		\$ 5,080
	÷	<u>200</u>

Annual capital cost per student \$ 24.40

D. Estimated cost of materials, etc., per student: \$ 2.40

Cost to expand traditional system in Comarca area \$ 67.60

Using the above cost estimate the following comparison can be made. The estimate of per pupil costs of the Comarca system (Table 4) is 22% lower than the traditional system estimated including incentives (Table 5). Therefore, the Comarca system is expected to be cost-effective. The real additional savings to the economy in both labor and capital costs can be considerable.

The estimates of the Comarca system cost, the present average cost per pupil enrolled in primary school, and the traditional system expanded to Comarca areas with incentives are \$50.80, \$60.13 and \$67.60 respectively. It should not be concluded from these figures that the Comarca system will operate at a cost comparable to general primary education systems elsewhere in Nicaragua even though it is the least-cost method of expanding into the Comarca areas. That is because cost estimates of the Comarca system are based on the assumption that schools will operate at peak efficiency of 50 students per classroom. That may not prove to be the case once the program is in operation. Therefore cost of expanding into Comarca areas may be higher than education costs in general. However, even if the Comarca system operates at 50% efficiency, the per pupil costs will still be low enough to justify reaching a target group of isolated rural poor on the basis of equity considerations.

### C. Engineering Analysis

(See Annex X for details)

1. General. The engineering component of this project involves the design and construction of 532 new classroom units (CSC + CFER + EAC) and 100 houses. For these, the total proposed areas are 22,632 square meters and 8,000 square meters respectively. Related construction activities to be performed outside the basic classroom units will involve an additional 5,832 square meters. As pointed out in Part III, 400 classroom units and 100 houses will be constructed in support of the COMARCA scheme. The remainder of the classroom units will be for the CFER and EAC centers whose basic functions are described in Part IV of this paper.

2. Engineering Analysis Summary. The results of this analysis show that the physical infrastructure proposed in support of this loan is feasible and within the capabilities of the GON, MPE, the private sector, and the proposed Local Communities. The greatest element of uncertainty found is that pertaining to the qualitative and quantitative sufficiency of rural based small contractors (individuals or firms). The success of the COMARCA construction and its labor-intensive aspects, depends in no small way on their availability and willingness to provide the required services. It is for this reason that one of the first tasks of the proposed Management Consulting Firm will be to conduct the survey necessary to provide this vital information.

D. Social Analysis (See Annex Y)

E. Environmental Impact Statement

An initial Environmental Examination was carried out for this project which identified and described the nature, scope and magnitude of the foreseeable effects of this project on the human environment (Annex M ). It was determined that the proposed Rural Education Program would not adversely affect the environment. Therefore, it was recommended in the IEE that this project receive a negative determination and that no additional environmental examinations be carried out on this project. The appropriate officials in AID/W have studied the IEE and have concurred that a negative threshold decision is in order.

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will be within the reach of anyone who has a radio and to those who have had only limited access previously to even the most basic education or skills training. This application of educational technology will facilitate conditions where educational services will be more accessible. Equity, and rural coverage coupled with planned revision and adaptation of curricula to complement basic development needs of the rural population in many fields can produce social fallout of great importance to improved economic development in rural areas; the basic point of economic health for the country as a whole. The improved planning, research, evaluation, management, and program development in the MPE through the grant project will result in educational change and reform which will further result in a basis for social change and the accomplishment of national rural development goals.

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## F. Project Timing

### 1. Implementation

As indicated previously, the Ministry of Public Education has a limited administrative/management capability to effectively implement this project at the present time. For this reason, the timing of project implementation becomes an important factor in reaching successful project outcomes. This program is time-phased to enable a gradual increase in the intensity of implementation activity over its five year life.

The first two years will focus primarily on the long-lead activities which are essential for the successful development of the program. Component One, Administrative Reform and Management Improvement, will be implemented as soon as this project is authorized and a Project Agreement is signed. Improving the administrative/management capabilities of the MPE is the key factor to successful project implementation.

Community development activities will also begin in the first year so that the MPE can begin forming an organization base on which the major (and most costly) activities of the program will depend.

Curriculum development activities will begin in year one and continue throughout the life of the project. The production of curriculum materials will begin to become a major effort in the third year of project implementation. Materials production is the major cost of Component Three.

The training of teacher trainers will be a long lead time activity and for this reason the majority of the professional teacher trainers are trained in year one. The remainder of the training activities are directly related to the development of curricula. Therefore the number of training workshops gradually increases over the life of the project.

The final major activity is the infrastructure, support and service component. Major efforts in the construction and repair of rural schools will not begin until year three of the project, with the majority of the schools being

repaired, constructed and furnished in the fourth and fifth years.

As a further strategy to increase the MPE capability to successfully implement this project, it is planned that the Ministry will retain the services of a local consulting firm to provide construction management services including the engineering and supervision. This will reduce the necessity for the MPE to channel scarce personnel and resources into the construction activities under this program. It is also expected that the MPE will contract with the large number of private printing shops for the production of learning materials.

The MPE and USAID are confident that this program can be implemented given the implementation plan briefly discussed above. A shorter implementation period would strain the MPE's managerial capability while a longer project period would weaken the linkages between the various project components.

## 2. Justification for Five-Year Project Period

The GON/AID education strategy is to expand and improve the delivery of educational services to the rural poor. It is clearly understood that expansion and improvement can only come about if the Ministry of Public Education is capable of implementing the program. For this reason, a phased program has been designed to allow the MPE the opportunity to slowly work into the position of managing a complex project.

The development of a relevant rural, primary curriculum that is radio-supported will take the full five years. Curriculum for grades one through four will be completed and ready to broadcast by January 1982. A shorter project period would threaten the curriculum and the teacher training components because each of these activities requires a substantial amount of testing and evaluation to insure effectiveness and relevancy.

Finally, the linkages between all five components create a program that must establish an institutional base before the operational aspects can be fully implemented. A five-year program is necessary to enable the various project components the opportunity to interrelate and develop into a unified approach to rural education.

## G. Population Impact Statement. (See Annex Z)

**PART V - IMPLEMENTATION ARRANGEMENTS****A. Borrower Arrangements**

1. Internal MPE Arrangements. The Minister of Public Education will direct the execution of all program components. She will designate a full-time Executive Director of the Program, acceptable to A.I.D., who will be a highly capable person with a sound background of graduate training in Administration and/or Economics and a minimum of three years' successful experience. A full-time Project Manager acceptable to the MPE and A.I.D. will be appointed for each component of the Rural Education Development Program, directly responsible to the Executive Director. The Executive Director of the Program, the Project Managers of the several components and the Directors of the Departments of Primary Education, Curriculum, Materials Production, Investments, Planning and Evaluation will constitute a Program Advisory Council to be chaired by the Director of Planning who will have overall responsibility for the Program and will report directly to the Minister.

The Program Advisory Council will meet weekly to review progress and problems and to decide on actions required. The Council will be the focus for setting targets, assigning roles and responsibilities, setting schedules and priorities and coordinating activities with other agencies. Contract advisors will participate in the Council to the extent that the Nicaraguan counterparts consider it an efficient use of their time. However, the Educational Management Advisor funded under Component One, will be a regular participant at Council meetings to ensure effective coordination of external assistance with program goals.

The foregoing arrangement is seen as appropriate in view of the fact that the Rural Education Development Program will involve activities on the part of the several departments of the Ministry to be represented on the Advisory Council, and several distinct delivery systems will be developed, evaluated and refined during the course of the program.

2. GON Inter-Agency Coordination. Since major emphasis is being placed on the integrated nature of the GON's rural development programs, the MPE recognizes that effective coordination amongst the several ministries and

and other public and private entities involved in such programs is indispensable if conflict, duplication and friction are to be avoided and efficiency maintained.

An Inter-Institutional Coordinating Committee is planned to coordinate the inter-agency aspects of the Rural Education Development Program. A carefully developed and formally agreed upon plan of operations will be designed to ensure such coordination in the areas of health, agriculture, nutrition and education. The MPE, MOH and INVIERNO will be regular members and representatives of other entities, both public and private, will participate as necessary. The Executive Director of the Program will chair regular monthly meetings and special meetings as necessary. The Educational Management Advisor will serve as the principal advisor to the Coordinating Committee throughout his assignment to the program.

3. The USAID judgment is that the above GON arrangements will be satisfactory to administer the five year program, including procurement, contracting, direction of the program to rural beneficiaries, etc. In this regard, the USAID will encourage GON selection of the best qualified individuals to direct the several components of the Program as well as to serve in the position of Executive Director. Appropriate technical assistance and training will be provided with funds from both the grant and the loan.

4. These arrangements will be reviewed during the first annual project evaluation and any changes that appear necessary or desirable as a result will be promptly put into effect.

B. A.I.D. Arrangements

1. USAID Administrative Responsibilities. Mission monitoring of the rural education program will be carried out by the Education and Human Resources Division, Capital Development Office, Controller Office, Engineering Office and Rural Development Division. The Chief of USAID's Education and Human Resources Division will be the full-time Program Manager and will chair the Mission Program Committee consisting of representatives from the Divisions and Offices named above. In addition, the Regional Legal Advisor, the Procurement/Contracting Officer and the Program Economist will assist as needed with implementation activities on the USAID side. Finally, the USAID expects that AID/W will actively

backstop program operations, including when appropriate the preparation and processing of documentation (e.g., PIPAs), etc.

2. Disbursement Procedures. All A.I.D. funds will be earmarked to specific project inputs through the PIPA procedure. USAID will choose appropriate disbursement procedures for the specific requirements of the goods and services being financed. This process should help facilitate disbursements and avoid procurement delays. Examples of these procedures are discussed below.

a. Disbursement for U.S. Dollar Costs

1) U.S. Bank Letter of Commitment. A.I.D. has substantially revised its regulations concerning the use of U.S. Bank Letters of Commitment. However, it is hoped that this procedure will be an option in the financing of commodities from non-CACM Code 941 countries. If this procedure is not available, the remaining alternative would be dollar advances for commodity procurement.

2) Dollar DRAS. A.I.D. financing for the dollar cost of foreign training and technical assistance will be made on a reimbursement basis under a dollar DRA. Per PD-68, the MPE will be encouraged to do the contracting for these costs.

b. Disbursement for Local Currency Costs. Disbursements for local currency costs will be made on a reimbursement basis under a local currency DRA. The Ministry of Finance will be requested to establish a revolving fund for project expenditures. If this proves unfeasible, USAID will consider making an advance to a revolving fund for project expenditures. The MPE does not have sufficient resources to maintain a revolving fund large enough to meet anticipated project activity expenditure rates.

Since the 400 rural classrooms to be constructed or reconstructed under the loan will be of similar design and will be constructed under contract with local contractors, USAID will negotiate with the MPE for the use of a modified Fixed Amount Reimbursement (FAR) procedure. USAID will establish at the time of approval of each construction sub-project a fixed reimbursement amount. It is anticipated that the A.I.D. proportion of financing will be 70%, with 30% coming from the MPE. In all cases of new construction the community will donate the land.

3. Procurement Procedures. Loan financed items will have their source and origin in Geographic Code 941 countries, including Nicaragua. Items of Geographic Code 935 source and origin may be financed if purchased off-the-shelf and their cost is less than \$2,500. It is estimated that approximately \$4,484 million of the combined grant/loan project will be utilized for dollar costs while approximately \$6,496 million will be provided for local currency procurement (Nicaragua and CACM). Per PD-68, the MPE will contract for nearly all the financed goods and services itself. However, it is anticipated that A.I.D. may be called on to contract for some foreign participant training. With respect to procurement for technical services, it is expected that the MPE will give preference to consultants with prior successful work experience in Nicaragua.

4. Accounting Procedures. This project will be accounted for and reported on an accrual basis by project specific inputs. (See Financial Section). A table of accrual basis is presented below.

<u>Type of Expenditures</u>	<u>Accrual Basis</u>
Commodities	Constructive Delivery
Technical Services	Person-months completed
Training	Person-months completed
Construction Services	% of Completion

C. Implementation Plan

It is planned that the Rural Educational Development grant-loan program will be implemented in accordance with the following appropriate schedule:

<u>Activity</u>	<u>Estimated Date</u>
Grant Project Agreement Signed and Loan Authorized.	By 3-31-77
Grant funded services begin.	By 4-30-77
Loan Agreement signed.	By 5-31-77
Conditions Precedent to Initial Disbursement met.	By 6-30-77

<u>Activity</u>	<u>Estimated Date</u>
First Loan Disbursement for Program.	By 8-31-77
First Evaluation of Program completed.	By 4-30-78
Other Special Conditions Precedent to Disbursement met.	By 6-30-78
Second Evaluation of Program Completed.	By 4-30-79
Third Evaluation of Program Completed.	By 4-30-80
Fourth Evaluation of Program Completed.	By 4-30-81
Fifth Evaluation of Program Completed.	By 12-30-82
Terminal Date for Requesting Disbursement.	By 3-31-82

Taken together with the Component Timetables in Annex 5 the above schedule represents the GON/A.I.D. best estimate as to program timing. These plans are reflected in greater detail in the Program Performance Tracking Chart of Annex "P". Detailed implementation plans for the curriculum, training and infrastructure components will be Conditions Precedent to Disbursement of loan funds for those activities.

D. Evaluation Plan

The Evaluation Department of the MPE's Division of Planning has the major responsibility for evaluation in the Education Sector. Under the Rural Education Development Program, this office will be strengthened to assure that: (1) evaluation becomes a continuous source of feedback into the Ministry's Planning Office, and (2) that progress towards the achievements of the project's indicators is measured in a timely, professional manner.

The principal evaluation activities which have been budgeted under this program are: (1) an institution building program; (2) a studies and specialized systems development program; and (3) yearly management reviews during the life of the project. In practice these categories will overlap heavily since the latter two

categories will provide "learning by doing" opportunities for the MPE's Evaluation Office. Approximately \$310,000 of project grant funds have been budgeted for support of MPE evaluation activities.

Under the institution building program, project funded technical assistance will be used to conduct workshops and to assist MPE personnel in their evaluation activities. The workshops will be function-specific, e.g. statistical methods for education as well as sub-component-specific, e.g. evaluation systems for teacher training, curriculum evaluation, evaluation of administrative and management procedures, etc. This technical assistance will be grant financed to insure that the evaluation office of the Ministry becomes sufficiently competent early in the life of this project.

The second activity provides for the funding of baseline data studies; developing in cooperation with the Curriculum Department evaluation procedures for on-going curricula preparation and revision, and coordinating special project evaluations which will be conducted by outside consultants. One of the major activities to be carried out early in the program will involve the development of educational baseline data for Regions II and V. The baseline study will provide insights into the basic assumptions of the concerning leadership, their attitudes towards education, their educational priorities, as well as more valid data on the precise extent and degrees of literacy and numeracy.

A study of the administration and management of the MPE will be carried out early in the project with the cooperation and assistance of the Evaluation Department. This special study will develop baseline information on how the MPE is administered and managed. In depth analyses will be made in the areas of planning, staffing, coordination, operations and budgeting. After this informational base is developed, specific proposals will be developed regarding modifications and changes that must be made so that the MPE becomes a more effective and responsive organization. Evaluation Department staff will take an active part in carrying out this study and developing the recommendations.

In addition to these special studies, an important task of the Evaluation Department will be to design an efficient evaluation system for the Curriculum Development Component of this program. The Evaluation and Curriculum Departments will work closely in developing a system which will feed back information

on the effectiveness of the radio-supported curricula and materials. This information will be extremely useful to the MPE as it revises the rural primary curriculum to better meet the needs of the rural areas.

The third evaluation activity will measure inputs delivered against outputs expected in accordance with the Logical Framework and Project Performance Tracking Network. These annual evaluations will be conducted jointly by the MPE and USAID with the assistance of outside technical consultants. These yearly evaluations will provide the MPE and USAID with the information needed to revise the project implementation plan as necessary. In the third and fifth annual evaluations, a review of the original assumptions as well as an assessment of the progress toward achievement of the project purposes will be made.

The Technical Assistance supporting all of the evaluation activities will be grant funded in order to insure timely and adequate application and to underline the importance attached to such evaluation activities.

A schedule of evaluation studies and dates is shown in the Implementation Plan (Section V.D.) and in the Project Performance Tracking Network in Annex P.

#### E. Conditions and Covenants

1. Prior to any disbursement for other than consulting services or training, the MPE shall have submitted a general time phased project implementation plan, including a schedule of counterpart allocations, satisfactory to A.I.D.

2. Prior to disbursement for other than consulting services or training for each specific project component, the MPE shall have submitted a detailed time phased implementation plan for such component satisfactory to A.I.D.

3. Any disbursement subsequent to January 31, 1978 shall be subject to the following conditions:

- a) the MPE Budget for 1978 shall contain the appropriate line items called for in the schedule of counterpart allocations submitted pursuant to condition 1 above.

- b) the MPE shall have contracted for consulting services satisfactory to A.I.D. to implement Component One (Administrative Reform) and shall be actively engaged in carrying out the activities set forth in said Component One.

4. Any disbursement for Project Component Five (Strengthening Rural Education Delivery Systems) shall be subject to the following conditions:

- a) A draft plan for administrative reform of the MPE satisfactory to A.I.D. shall have been prepared pursuant to Component One.
- b) The MPE shall, to the satisfaction of A.I.D. have: (i) developed both adequate capability to carry out Component Two (Community Development) and a detailed plan therefor; and (ii) put into operation the above plan.
- c) The MPE shall, to the satisfaction of A.I.D., have: (i) developed both adequate capability to carry out Component Three (Curriculum Development) and a detailed plan therefor; and (ii) put into operation the above plan.
- d) The MPE shall, to the satisfaction of A.I.D., have: (i) developed both adequate capability to carry out Component Four (Training) and a detailed plan therefor; and (ii) put into operation the above plan.

5. Any disbursement subsequent to January 31, 1979 shall be subject to the following conditions:

- a) Satisfaction of all Conditions under 4 above.

- b) The MPE Budget for 1979 shall contain the appropriate line items called for in the schedule of counterpart allocations submitted pursuant to Condition 1 above or such other items and amounts as may be necessary and proper for successful project implementation.
- c) A maintenance plan for project schools and equipment satisfactory to A.I.D. shall have been prepared, legally put into effect, and budgeted at a level satisfactory to A.I.D. in the MPE Budget for 1979.

6. Any disbursement subsequent to January 31, 1980 shall be subject to the following conditions:

- a) A plan of administrative reform for the MPE satisfactory to A.I.D. shall have been put into operation.
- b) The MPE Budget for 1980 shall contain the appropriate line items called for in the schedule of counterpart allocations submitted pursuant to Condition 1 above or such other items and amounts as may be necessary and proper for successful project implementation.

7. Any disbursement subsequent to January 31, 1980 shall be subject to the following conditions:

- a) The MPE Budget for 1981 shall contain the appropriate line items called for in the schedule of counterpart allocations submitted pursuant to Condition 1 above or such other items and amounts as may be necessary and proper for successful project implementation.

8. Any disbursement subsequent to January 31, 1982 shall be subject to the following conditions:

- a) The MPE Budget for 1982 shall contain the appropriate line items called for in the schedule of counterpart allocations submitted pursuant to Condition 1 above or such other items and amounts as may be necessary and proper for successful project implementation.

9. The GON Covenants to budget, for years subsequent to project completion, sums of money adequate to meet the recurring operating costs of the institutions and facilities developed pursuant to the project.

10. The Project shall be subject to such other terms and conditions as A.I.D. may deem advisable.

CHECKLIST OF STATUTORY CRITERIA  
(Alliance for Progress)

A. GENERAL CRITERIA FOR COUNTRY

1. FAA Sec. 116. Can it be demonstrated that contemplated assistance will directly benefit the needy? If not, has the Department of State determined that this government has engaged in consistent pattern of gross violations of internationally recognized human rights? Yes. This program is designed to improve and expand educational opportunities for Nicaragua's rural poor population.
2. FAA Sec. 481. Has it been determined that the government of recipient country has failed to take adequate steps to prevent narcotics drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully? No.
3. FAA Sec. 620(a). Does recipient country furnish assistance to Cuba or fail to take appropriate steps to prevent ships or aircraft under its flag from carrying cargoes to or from Cuba? No.
4. FAA Sec. 620(b). If assistance is to a Government, has the Secretary of State determined that it is not controlled by the international Communist movement? Yes.
5. FAA Sec. 620(c). If assistance is to government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government? No.

6. FAA Sec. 620(e)(1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities? No.
7. FAA Sec. 620(f); App. Sec. 108. Is recipient country a Communist country? Will assistance be provided to the Democratic Republic of Vietnam (North Vietnam), South Vietnam, Cambodia or Laos? No.
8. FAA Sec. 620(i). Is recipient country in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression? No.
9. FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property? No.
10. FAA Sec. 620(l). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, inconvertibility or confiscation, has the AID Administrator within the past year considered denying assistance to such government for this reason? The Investment Guarantee Program does exist in Nicaragua.
11. FAA Sec. 620(o); Fishermen's Protective Act, Sec. 5. If country has seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters, No.
- a. has any deduction required by Fishermen's Protective Act been made? No.
- b. has complete denial of assistance been considered by AID Administrator? No.

12. FAA Sec. 620 g); App. Sec. 504. No.  
(a) Is the government of the recipient country in default on interest or principal of any AID loan to the country? (b) Is country in default exceeding one year on interest or principal on U.S. loan under program for which App. Act appropriates funds, unless debt was earlier disputed, or appropriate steps taken to cure default?
13. FAA Sec. 620(s). What percentage of country budget is for military expenditures? How much of foreign exchange resources spent on military equipment? How much spent for the purchase of sophisticated weapons systems? (Consideration of these points is to be coordinated with the Bureau for Program and Policy Coordination, Regional Coordinators and Military Assistance Staff (PIC/RC).) In 1976 approximately 11.1% of the GON budget was defense expenditures. Defense expenditures for 1977 will be approximately 10.7% of the total budget.
14. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption? No.
15. FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the AID Administrator in determining the current AID Operational Year Budget? Nicaragua is not delinquent in the payment of its U.N. obligations.
16. FAA Sec. 620A. Has the country granted sanctuary from prosecution to any individual or group which has committed an act of international terrorism? No.
17. FAA Sec. 666. Does the country object, on basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. there to carry out economic development program under FAA? No.
18. FAA Sec. 669. Has the country delivered or received nuclear reprocessing or enrichment equipment, materials or technology, without specified arrangements on safeguards, etc.? No.

19. FAA Sec. 901. Has the country denied its citizens the right or opportunity to emigrate?

No.

B. FUNDING CRITERIA FOR COUNTRY

1. Development Assistance Country Criteria

a. FAA Sec. 102(c),(d). Have criteria been established, and taken into account, to assess commitment and progress of country in effectively involving the poor in development, on such indexes as: (1) small-farm labor intensive agriculture, (2) reduced infant mortality, (3) population growth, (4) equality of income distribution, and (5) unemployment.

Yes. All AID assisted projects in Nicaragua include criteria for assessing the degree to which the recipient country is promoting increased involvement of the poor in development programs.

b. FAA Sec. 201(b)(5),(7)&(8); Sec. 208; 211(a)(4),(7). Describe extent to which country is:

- 1) Making appropriate efforts to increase food production and improve means for food storage and distribution.
- (2) Creating a favorable climate for foreign and domestic private enterprise and investment.
- (3) Increasing the public's role in the developmental process.
- (4) (a) Allocating available budgetary resources to development.  
  
(b) Diverting such resources for unnecessary military expenditure and intervention in affairs of other free and independent nations.
- (5) Making economic, social, and political reforms such as tax collection improvements and changes in land tenure arrangements, and making progress toward respect for the rule of law, freedom of expression and of the press, and recognizing the importance of individual freedom, initiative, and private enterprise.

Within existing budgetary limitations Nicaragua encourages increased productivity in the agricultural sector, particularly among small farmers.

Private enterprise both foreign and domestic is respected, encouraged and promoted in Nicaragua.

This program is specifically designed to provide school age children and adults in rural areas with literacy skills.

Nicaragua does not appear to be making unnecessary military expenditures. It does not intervene in the affairs of other nations.

Nicaragua is presently involved in several land reform studies for future action. Several enabling decrees have already been passed.

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ANNEX B

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(6) Otherwise responding to the vital economic, political, and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.

The Government's major effort in the area of integrated rural development to improve the socio-economic status of the poor is a concrete demonstration of its efforts in this area.

c. FAA Sec. 201(b), 211(a). Is the country among the 20 countries in which development assistance loans may be made in this fiscal year, or among the 40 in which development assistance grants (other than for self-help projects) may be made?

Yes. It is included among the countries in which development loans and grants may be made.

d. FAA Sec. 115. Will country be furnished, in same fiscal year, either security supporting assistance, or Middle East peace funds? If so, is assistance for population programs, humanitarian and through international organizations, or regional programs?

No.

2. Security Supporting Assistance Country Criteria

a. FAA Sec. 502B. Has the country engaged in a consistent pattern of gross violations of internationally recognized human rights? Is program in accordance with policy of this Section?

No.

b. FAA Sec. 531. Is the Assistance to be furnished to a friendly country, organization, or body eligible to receive assistance?

Yes. Through various acts and demonstrations of support for U.S. positions in international forums, Nicaragua has shown itself to be a friendly country.

c. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?

Not applicable.

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6C(2) - PROJECT CHECKLIST

Listed below are, first, statutory criteria applicable generally to projects with FAA funds, and then project criteria applicable to individual fund sources: Development Assistance (with a sub-category for criteria applicable only to loans); and Security Supporting Assistance funds.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? IDENTIFY. HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT?

GENERAL CRITERIA FOR PROJECT.

1. App. Unnumbered; FAA Sec. 653(b)

(a) Describe how Committees on Appropriations of Senate and House have been or will be notified concerning the project; (b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that figure plus 10%)?

A description of this project was shown on page 212 of the FY 1978 Congressional Presentation.

2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?

Yes.

3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?

Budgetary actions are in progress and are expected to be completed in sufficient time to ensure orderly and timely implementation of the program.

4. FAA Sec. 611(b); App. Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per Memorandum of the President dated Sept. 5, 1973 (replaces Memorandum of May 15, 1962; see Fed. Register, Vol 38, No.174, Part III, Sept. 10, 1973)?

Not applicable.

5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified the country's capability effectively to maintain and utilize the project? **Yes.** The Director has so certified.
6. FAA Sec. 209, 619. Is project susceptible of execution as part of regional or multi-lateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. If assistance is for newly independent country, is it furnished through multilateral organizations or plans to the maximum extent appropriate? **No.**
7. FAA Sec. 601(a); (and Sec. 201(f) for development loans). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions. Improved educational opportunities for rural primary students, school leavers in the 14-18 age group and presently illiterate adults is expected to, in the long-run encourage the development of mutual assistance organizations such as cooperatives and improve the technical efficiency of industry, agriculture and commerce.
8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise). Substantial goods and technical services will be purchased from the United States.

9. FAA Sec. 612(b); Sec. 636(h).  
Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized to meet the cost of contractual and other services.

The Government of Nicaragua's contribution substantially exceeds the required contribution to the program.

10. FAA Sec. 612(d). Does the U.S. own excess foreign currency and, if so, what arrangements have been made for its release?

Not applicable.

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 102(c); Sec. 111; Sec. 281a. Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production, spreading investment out from cities to small towns and rural areas; and (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions?

The program will provide the rural poor with increased education opportunities which will in turn permit them to participate more actively in the local economy and contribute to the growth of local governmental programs.

- (5) 107 by grants for coordinated private effort to develop and disseminate intermediate technologies appropriate for developing countries. No
- c. FAA Sec. 110(a); Sec. 208(e). Is the recipient country willing to contribute funds to the project, and in what manner has or will it provide assurances that it will provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively" least-developed" country)? Yes, the Government of Nicaragua has indicated its willingness to finance 50% of the total cost of the program.
- d. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing? No
- e. FAA Sec. 207; Sec 113. Extent to which assistance reflects appropriate emphasis on; (1) encouraging development of democratic, economic, political, and social institutions; (2) self-help in meeting the country's food needs; (3) improving availability of trained workerpower in the country; (4) programs designed to meet the country's health needs; (5) other important areas of economic, political, and social development, including industry; free labor unions, cooperatives, and Voluntary Agencies; transportation and communication; planning and public administration; urban development, and modernization of existing laws; or (6) integrating women into the recipient country's national economy. The program supports extensive, locally initiated efforts to develop community self-help and human resource development in the field of education.
- f. FAA Sec.281(b). Describe extent to which program recognized the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civic education and training in skills required for effective participation in governmental and political processes essential to self-government. Through use of the self-help efforts of community level committees, the program recognizes the effective contribution which the rural population can make to the program.

- g. FAA Sec. 201(b) (2)-(4) and -(8); Sec. 201(e); Sec. 211(a) (1)-(3) and -(8). Yes

Does the activity give reasonable promise of contributing to the development: of economic resources, or to the increase of productive capacities and self-sustaining economic growth; or of educational or other institutions directed toward social progress? Is it related to and consistent with other development activities, and will it contribute to realizable long-range objectives? And does project paper provide information and conclusion on an activity's economic and technical soundness?

- h. FAA Sec. 201(b) (6); Sec. 211 (a) (5), (6). Information and conclusion on possible effects of the assistance on U.S. economy, with special reference to areas of substantial labor surplus and extent to which U. S. commodities and assistance are furnished in a manner consistent with improving or safeguarding the U. S. balance-of-payments position.

The program will provide for the procurement of technical services and some commodities in the U. S.

2. Development Assistance Project Criteria  
(loans only)

- a. FAA Sec. 201 (b) (1). Information and conclusion on availability of financing from other free-world sources, including private sources within U. S.

By its nature the program requires long-term concessional financing, and other sources of such financing are not available at this time.

- b. FAA Sec. 201(b) (2); 201(d). Information and conclusion on (1) capacity of the country to repay the loan, including reasonableness of repayment prospects, and (2) reasonableness and legality (under laws of country and U.S.) of lending and relending terms of the loan.

Nicaragua has the capacity to repay the loan.

- c. FAA Sec. 201(e). If loan is not made pursuant to a multilateral plan, and the amount of the loan exceeds \$100,000, has country submitted to AID an application for such funds together with assurances to indicate that funds will be used in an economically and technically sound manner? Yes

- d. FAA Sec. 201(f). Does project paper describe how project will promote the country's economic development taking into account the country's human and material resources requirements and relationship between ultimate objectives of the project and overall economic development? Yes
- e. FAA Sec. 202(a). Total amount of money under loan which is going directly to private enterprise, is going to intermediate credit institutions or other borrowers for use by private enterprise, is being used to finance imports from private sources, or is otherwise being used to finance procurements from private sources? Not applicable.
- f. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete in the U.S. with U.S. enterprise, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan? No such enterprise is being assisted.
3. Project Criteria Solely for Security Supporting Assistance
- FAA Sec. 531. How will this assistance support promote economic or political stability?
4. Additional Criteria for Alliance for Progress
- (Note: Alliance for Progress projects should add the following two items to a project checklist.) Yes, as a comonstration effort.
- a. FAA Sec. 251(b)(1), -(8). Does assistance take into account principles of the Act of Bogota and the Charter of Punta del Este; and to what extent will the activity contribute to the economic or political integration of Latin America? The program also takes the Act of Bogota and the Charter of Punta del Este into account.

b. FAA Sec. 251(b)(8); 251(h). For loans, has there been taken into account the effort made by recipient nation to repatriate capital invested in other countries by their own citizens? Is loan consistent with the findings and recommendations of the Inter-American Committee for the Alliance for Progress (now "CEPCIES", the Permanent Executive Committee of the OAS) in its annual review of national development activities?

No. The loan is consistent with the most recent CEPCIES finding concerning Nicaragua.

6C(3) - STANDARD ITEM CHECKLIST

Listed below are statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by exclusion (as where certain uses of funds are permitted, but other uses not).

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. Procurement

1. FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of goods and services financed? U.S. small business will be afforded an opportunity to participate equitably in the furnishing of goods and services for the Program.
2. FAA Sec. 604(a). Will all commodity procurement financed be from the U.S. except as otherwise determined by the President or under delegation from him? Yes.
3. FAA Sec. 604(d). If the cooperating country discriminates against U.S. marine insurance companies, will agreement require that marine insurance be placed in the U.S. on commodities financed? Yes.
4. FAA Sec. 604(e). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? Not applicable.
5. FAA Sec. 608(a). Will U.S. Government excess personal property be utilized wherever practicable in lieu of the procurement of new items? Yes.

6. MMA Sec. 901(b). (a) Compliance with requirement that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S.-flag commercial vessels to the extent that such vessels are available at fair and reasonable rates. Yes.
7. FAA Sec. 621. If technical assistance is financed, will such assistance be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis? If the facilities of other Federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs? Technical assistance will be purchased from private sources with some assistance from Federal Agencies.
8. International Air Transport. Fair Competitive Practices Act, 1974  
If air transportation of persons or property is financed on grant basis, will provision be made that U.S.-flag carriers will be utilized to the extent such service is available? Yes.

B. Construction

1. FAA Sec. 601(d). If a capital (e.g., construction) project, are engineering and professional services of U.S. firms and their affiliates to be used to the maximum extent consistent with the national interest? Not applicable.
2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable? AID's normal procurement procedures will be followed.

3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million? Not applicable.

C. Other Restrictions:

1. FAA Sec. 201(d). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter? Yes.
2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights? Not applicable.
3. FAA Sec. 620(h). Do arrangements preclude promoting or assisting the foreign aid projects or activities of Communist-Bloc countries, contrary to the best interests of the U.S.? Yes.
4. FAA Sec. 636(i). Is financing not permitted to be used, without waiver, for purchase, long-term lease, or exchange of motor vehicle manufactured outside the U.S. or guaranty of such transaction? No.
5. Will arrangements preclude use of financing:
- a. FAA Sec. 114. to pay for performance of abortions or to motivate or coerce persons to practice abortions? Not applicable.
- b. FAA Sec. 620(g). to compensate owners for expropriated nationalized property? Yes
- c. FAA Sec. 660. to finance police training or other law enforcement assistance, excepto for narcotics programs. Yes
- d. FAA Sec. 662. for CIA activities? Yes
- e. App. Sec. 103. to pay pensions, etc. for military personnel? Yes
- f. App. Sec. 106. to pay U.N. assessments? Yes

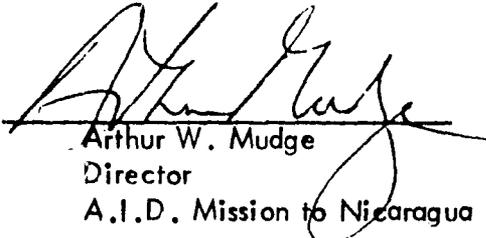
g. App. Sec. 107. to carry out provisions of FAA Sections 209(d) and 251(h)? (transfer to multi-lateral organization for lending). Yes

h. App. Sec. 501. to be used for publicity or propaganda purposes within U.S. not authorized by Congress? Yes

CERTIFICATION PURSUANT TO SECTION 611(E) OF THE  
FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED

I CERTIFY to the Administrator of the Agency for International Development that, to the best of my knowledge and belief, Nicaragua possesses both the financial capability and human resources to maintain and utilize effectively the project to be undertaken pursuant to the terms of the A.I.D. Loan proposed in this paper. This Loan, between the United States of America and the Government of Nicaragua, will assist said Government in extending, improving and managing educational services in its rural areas. It should be noted that, in so certifying, provision is being made under the program for extensive technical assistance for each program component in order to ensure effective utilization of a development project of this nature and magnitude. I have also taken into account the maintenance and utilization of projects in Nicaragua previously financed or assisted by the United States, the capability of the institutions of Nicaragua, and the activities of other external donors with which the activities under this Loan are closely interrelated.

3/8/77  
Date

  
Arthur W. Mudge  
Director  
A.I.D. Mission to Nicaragua

PROJECT AUTHORIZATION AND REQUEST  
FOR ALLOTMENT OF FUNDS

Name of Country: NICARAGUA  
Name of Project: Education and Human  
Resources Development  
Number of Project: 524-V-033

Pursuant to Part I, Chapter I, Section 105 of the Foreign Assistance Act of 1961, as amended, I hereby authorize a Loan and a Grant to the Republic of Nicaragua, the ("Cooperating Country") of not to exceed TEN MILLION NINE HUNDRED AND EIGHTY THOUSAND United States Dollars (\$10, 980, 000) the ("Authorized Amount") to help in financing certain foreign exchange and local currency costs of goods and services required for the project as described in the following paragraph.

The Project consists of a program to extend, improve and integrate the educational services furnished to two of Nicaragua's lowest income rural regions (hereinafter referred to as the "Project"). Of the Authorized Amount Ten Million Dollars ("Loan") will be lent to the Cooperating Country to assist in financing certain foreign exchange and local currency costs of goods and services required for the Project. The entire amount of the A. I. D. financing herein authorized for the Project will be obligated when the Project Agreement is executed.

I hereby authorize the initiation of negotiation and execution of the Project Agreement by the officer to whom such authority has been delegated in accordance with A. I. D. regulations and delegations of Authority subject to the following essential terms and covenants and major conditions; together with such other terms and conditions as A. I. D. may deem appropriate.

-2-

A. Interest Rate and Terms of Repayment.

The Cooperating Country shall repay the Loan to A. I. D. in United States Dollars within thirty (30) years from the date of first disbursement of the Loan, including a grace period of not to exceed ten (10) years. The Cooperating Country shall pay to A. I. D. in United States dollars interest from the date of first disbursement of the Loan at the rate of (a) two percent (2%) per annum during the first ten (10) years, and (b) three percent (3%) per annum thereafter on the outstanding disbursed balance of the Loan and on any due and unpaid interest accrued thereon.

B. Source and Origin of Goods and Services.

Goods and Services (except for ocean shipping) and marine insurance financed under the Loan shall have their source and origin in countries which are members of the Central American Common Market or countries included in Code 941 of the A. I. D. Geographic Code Book. Marine insurance may be financed under the Loan only if it is obtained on a competitive basis, and any claims thereunder are payable in freely convertible currencies. Ocean shipping financed under the Loan shall be procured in any country included in Code 941 of the A. I. D. Geographic Code Book, excluding countries which are members of the Central American Common Market.

C. Prior to any disbursement, or the issuance of any commitment documents for other than consulting services or training under this Agreement Borrower/Grantee shall furnish in form and substance satisfactory to A. I. D., a general time-phased project implementation plan for all program activities, including a schedule of counterpart allocations.

D. Prior to any disbursement, or the issuance of any commitment documents under this Agreement for other than consulting services or training for each specific project component, the Borrower/Grantee shall have submitted

a detailed time-phased implementation plan for such component.

E. Prior to any disbursement or the issuance of any commitment documents under this agreement, subsequent to December 31, 1977, Borrower/Grantee shall furnish in form and substance satisfactory to A. I. D.:

1. A Ministry of Public Education (MPE) budget for 1978 containing the appropriate line items required by the schedule of counterpart allocations submitted pursuant to Section C. above.

2. A. I. D. approved contracts for consulting services to implement Component One (Administrative Reform) and evidence that the Borrower/Grantee is actively engaged in carrying out the activities in said component.

F. Prior to any disbursement, or the issuance of any commitment documents to finance Project Component Five (Strengthening Rural Education Delivery System) Borrower/Grantee shall furnish in form and substance satisfactory to A. I. D.:

1. A draft plan for Administrative Reform of the MPE prepared pursuant to Component One.

2. Evidence that MPE has developed both the adequate capability to carry out Component Two (Community Development), Component Three (Curriculum Development) and Component Four (Training) and a detailed plan therefor and that the said plan is operational.

G. Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, subsequent to December 31, 1978, Borrower/Grantee shall furnish in form and substance satisfactory to A. I. D.:

1. Satisfaction of all conditions precedent under F. above.

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2. A budget for 1979 containing the appropriate line items required by the schedule of counterpart allocations submitted pursuant to Condition C. above and such other items and amounts as may be necessary for successful project implementation.

3. A maintenance plan for project schools and equipment shall have been prepared, legally put into effect, and budgeted at a level satisfactory to A. I. D. in the MPE budget for 1979.

H. Prior to any disbursement, or the issuance of any commitment document under the Project Agreement subsequent to December 31, 1979, Borrower/Grantee shall furnish in form and substance satisfactory to A. I. D.:

1. A plan for administrative reform for the MPE shall have been put into operation.

2. The MPE budget for 1980 containing the appropriate line items required in the schedule of counterpart allocations submitted pursuant to Condition C. above, or such other items and amounts as may be necessary for successful project implementation.

1. Prior to any disbursement, or the issuance of any commitment document under the Project Agreement, subsequent to December 31, 1980, Borrower/Grantee shall furnish in form and substance satisfactory to A. I. D.:

1. The MPE budget for 1981 containing appropriate line items required by the schedule of counterpart allocations submitted pursuant to Condition C. above or such other line items and amounts as may be necessary for successful project implementation.

J. Prior to any disbursement, or the issuance of any commitment document under the Project Agreement, sub-

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sequent to December 31, 1981, shall be subject to the following conditions:

1. The MPE budget for 1982 containing the appropriate line items required by the schedule of counterpart allocations submitted pursuant to Condition C. above or such other items and amounts as may be necessary for successful project implementation.

K. Borrower/Grantee shall covenant that it will continually budget subsequent to project completion, sums of money adequate to meet the recurring costs of the institutions and facilities developed pursuant to the project.

L. The Loan/Grant shall be subject to other terms and conditions as A. I. D. may deem advisable.

By: \_\_\_\_\_

Date: \_\_\_\_\_