

PD-AAN-524

ISN-32284

UNCLASSIFIED

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D. C. 20523

HONDURAS
HONDURAS

PROJECT PAPER

RURAL PRIMARY EDUCATION
(Amedment)

AID/LAC/P-052/1

Project Number: 522-0167
Loan Number: 522-V-040

UNCLASSIFIED

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

IDENTIFICATION CODE

Amendment Number
 1

DOCUMENT CODE
 3

COUNTRY/ENTITY
 HONDURAS

PROJECT NUMBER
 522-0167

BUREAU/OFFICE

LAC

05

RURAL PRIMARY EDUCATION

PROJECT ASSISTANCE COMPONENT AND AID FACD

FINANCIAL STATEMENT CATEGORIZATION

MM DD YY
 04 30 85

APPROVAL DATE
 8 0

C. Final FY 84

A. FUNDING SOURCE	B. FISCAL YEAR				C. LIFE OF PROJECT	
	F. FY	G. FY	D. FY	E. FY	F. LC	G. Total
AID Appropriated Total	1,550	1,450	3,000	3,109	12,541	15,650
(Grant)	350	150	500	1,256	544	1,800
(Loan)	1,200	1,300	2,500	1,853	11,997	13,850
Other: 1. U.S.						
Host Country	-0-	50	50	-0-	11,901	11,901
Other Donors						
TOTALS	1,550	1,500	3,050	3,109	24,442	27,551

A. AID APPROPRIATION	B. FISCAL YEAR	C. FISCAL YEAR	D. FUNDING SOURCE		E. AMOUNT APPLIED FOR ALLOCATION		F. LIFE OF PROJECT	
			1. Grant	2. Loan	1. Grant	2. Loan		
(1) EH	624	636	800	13,850	650	-0-	1,800	13,850
(2)								
(3)								
(4)								
TOTALS	624	636	800	13,850	650	-0-	1,800	13,850

A. AID APPROPRIATION		B. FISCAL YEAR		C. FISCAL YEAR		D. FUNDING SOURCE		E. AMOUNT APPLIED FOR ALLOCATION		F. LIFE OF PROJECT	
1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan

- Expand and improve the physical infrastructure of the primary education system in rural areas to enable the MOE to keep up with the growth of the school age population while increasing the percentage of that population enrolled; and
- Improve the quality of primary education received in rural schools thus reducing the desertion rates.

14. SOURCE OF FUNDS AND SERVICES

GRANT LOAN Other (Specify)

15. NUMBER OF CHANGES TO THIS SHEET: 47

Best Available Document

Anthony J. Gaferucci
 Mission Director

072883

DATE DOCUMENT PREPARED
 BY
 MM DD YY

PROJECT AUTHORIZATION
(Amendment No. 1)

Name of Country: Honduras
Name of Project: Rural Primary Education
Number of Project: 522-0167
Number of Loan: 522 V-040

1. Pursuant to Section 105 of the Foreign Assistance Act of 1961, as amended, the Rural Primary Education Project for the Republic of Honduras was authorized on July 8, 1980. That authorization is hereby amended as follows:

a. Paragraph 1 of the authorization is hereby deleted in its entirety and the following substituted therefor:

"1. Pursuant to Section 105 of the Foreign Assistance Act of 1961 as amended, I hereby authorize the Rural Primary Education Project for the Republic of Honduras (the Cooperating Country) involving planned obligations of not to exceed Thirteen Million Eight Hundred Fifty Thousand United State Dollars (\$13,850,000) in loan funds ("Loan") and One Million Eight Hundred Thousand Dollars (\$1,800,000) in Grant funds ("Grant") over a four-year period from the date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the project."

b. Paragraph 2 of the authorization is hereby deleted in its entirety and the following substituted therefor:

"2. The project ("Project") consists of the equipping, construction, and renovation of rural primary classrooms, construction of teacher housing, the establishment of a maintenance system capable of covering all rural primary schools and the improvement of the primary school supervision and in-service teacher training systems, and the second phase of the institutionalization of a computer based management information system in the Ministry of Education."

2. The authorization cited above remains in force except as hereby amended.

Signature: 
Anthony J. Gaunterucci, Mission Director

USAID/Honduras
Office Symbol

7/28/83
Date

Drafted by: PCR:Rowens RO
Cleared by: HRD:MBernbaum (in draft)
HRD:RWitherell (in draft)
CONT:PAmos (in draft)
PCR:EZallman (in draft) EZ
DMD:RLNicholson (in draft)

INDEX

	Page
I. BACKGROUND	1
A. Problem Definition	1
B. History of the Information Systems Activity and Accomplishments to Date	2
1. Creation of a Research Unit within the Ministry of Education	2
2. Continuation of Assistance to the Research Unit under Project 522-0119	3
3. Feasibility Study and Purchase of a WANG VS Computer	3
4. Initiation of the Information Systems Activity	4
5. Key Accomplishments of the System over the Past Seventeen Months	5
6. Evaluation of Activities to Date	6
C. Justification for a Follow-on to the Information Systems Project	7
D. Linkages with Project 522-0167	8
E. Other Donor Assistance	8
II. PROJECT DESCRIPTION	9
A. Summary of the Logical Framework Matrix	9
1. Program Goal	9
2. Project Sub-goal	9
3. Project Purpose	10
4. Project Outputs	11
5. Project Inputs	13

B.	Description of Project Activities	14
1.	Activity A: Conceptualization of the MIS	14
2.	Activity B: Formal Establishment of the Information Systems Department	17
3.	Activity C: Support and Enhancement for the Subsystem for Educational Statistics	23
4.	Activity D: Initiation of Feasibility Studies for New Subsystems	28
III. PROJECT ANALYSES		
A.	Technical/Institutional Analysis	29
B.	Social Soundness Analysis	39
C.	Economic Analysis	42
IV. IMPLEMENTATION PLAN		
A.	Implementation Arrangements	44
1.	AID Liaison/MOE Reporting Relationships	44
2.	Procurement Plan	45
3.	Detailed Implementation Plan	45
B.	Evaluation Plan	46
C.	Financial Analysis and Plan	47
ANNEXES:		
A.	An Overview of the Conceptualization underlying the Management Information System.	
B.	Tables, Charts, Reports and Studies Produced to Date.	
C.	Technical Advisory Roles under the Project	
D.	The Coordinator of the Information System.	

- E. Training Activities to be Carried out under the Project
- F. Justification for Purchase of Additional Computer Equipment
- G. Project Financial Plan
- H. Detailed Implementation Plan
- I. AID/W Cable
- J. GOH Letter of Request
- K. Log Frame

I. BACKGROUND

A. Problem Definition.

The Honduran Ministry of Education (MOE) is the largest Government of Honduras (GOH) bureaucracy. It employs 4,500 administrative staff, over 27,000 teachers, and either directly carries out or is responsible for supervising the education of over 900,000 students. The CY 1983 MOE operating budget of \$126,559,000 represents 15% of the GOH budget. Only the Ministry of Public Transportation surpasses the MOE in its annual operating budget.

In addition to being the GOH's largest Ministry, the MOE is also one of the most rapidly growing Ministries in administrative responsibility as well as budget. Since 1973 the MOE budget has more than quadrupled; primary enrollments have grown from 421,000 to 716,000; secondary enrollments have grown from 60,000 to 175,000; and teaching and administrative staff have almost doubled (from 16,200 in 1973 to 31,741 in 1983).

Keeping up with the rapid pace of growth and the large number of administrative as well as technical processes associated with running a Ministry of this nature has been a major challenge, one that the MOE has not been as successful at meeting as it would have liked. As of early 1981 all MOE procedures, with the exception of payroll, were still being carried out by hand. Annual data on enrollments were being tabulated manually with the result that the Statistical Yearbook for the corresponding year usually took two years to produce. MOE records on secondary graduates, which must be obtained directly from the MOE by individuals applying for entrance into the university, often require weeks or even months to retrieve. With no central mechanism for keeping track of inventory there is no way of knowing at any one time to what extent the MOE is proceeding according to plan in meeting its annual expenditure targets. The annual budget exercise, a massive activity that involves preparing projections for the subsequent year and justifying increases in operating expenses for each MOE line office, often falls into confusion and duplication.

MOE authorities have long recognized that they have a problem. They have also recognized that in order to resolve this problem a number of actions - administrative, managerial, and other - are in order. It was not, however, until early 1981 that there was an acknowledgement at the highest levels within the MOE (e.g., at the level of the Minister) that one way of attacking this problem was through mechanization of MOE activities.

B. History of the Information Systems Activity and Accomplishments to Date

The Project that is described in this document is the logical continuation of a series of activities that have been taking place with A.I.D. support since 1976. These activities have in part been oriented toward assisting the MOE to deal with the increasing technical and administrative demands of a rapidly growing bureaucracy.

In order to have a more adequate basis for understanding the Project presented in Section II below and to put it into an overall context of the steps that preceded it, it is important to highlight the following aspects of its history:

1. Creation of a Research Unit within the Ministry of Education and Training of Staff in Research Methodology and Basic Data Processing Techniques.

What is now known as the MOE Information System has a history that can be traced to late 1976 when A.I.D. financed, under the Non-formal Education Project (Project 522-0108), the training of nine primary school teachers in descriptive statistics and basic research and evaluation methodology. The Project was successfully completed in January of 1978 with the graduation of eight of the participants as Technicians in Research & Evaluation; the formal creation of a Research Unit within the General Directorate of Planning & Curriculum Reform; and the creation of eight direct hire positions within the Unit for graduates of this program. Prior to this time activities in the area of research and evaluation had been minimal and, with the exception of the Payroll Office, the MOE had no experience with electronic data processing.

Experience using electronic data processing facilities for other than basic payroll functions began within the context of the training received under this Project. Several of the participants received training in the use of SPSS, a very powerful package for carrying out statistical analysis for the social sciences which had been donated to the GOH by A.I.D. and housed in the central computer facilities in the Ministry of Finance. Their level of expertise with the use of the SPSS package became so strong that two members of the Research Unit were invited to Panama to provide staff in the Ministry of Health with orientation in how to use this package.

2. Continuation of Assistance to the Research Unit under A.I.D. Project 522-0119, Rural Education:

Based in large part on the success of the Non-formal Education Project, A.I.D. in 1978 decided to enter into a second project with the MOE with the slightly larger focus of "institutionalizing a management system within the MOE with the capacity to design, test, deliver improved curricula and instructional materials and train primary rural teachers in their use". One of the key components of this project centered on the topic of "Information and Evaluation". As designed, this component was to provide information for use in designing, obtaining general feedback on, and evaluating the other project components.

Due in large part to changes in Government, the Project got off to a late and misguided start and, as was pointed out in an interim evaluation carried out in December of 1980, the Information/Evaluation component never really got off the ground. One of the recommendations of the evaluator was that the Research and Statistics Units become better integrated into the Project and that the objectives of the Information/Evaluation component be better defined. Another recommendation was that the concept of Information/Evaluation be expanded to cover not just Project activities, but rather MOE activities in general.

3. Feasibility Study and purchase of a WANG VS Computer:

In March of 1981 a consultant was hired to develop a conceptual framework for a computer based information system within the MOE. Two key recommendations of the study were the following: (a) that an Information Systems Department be formally created in the MOE; and (b) that remaining Project 522-0119 funds reserved for the Information/Evaluation component be utilized to purchase a computer system for the MOE. The paperwork leading toward the computer purchase was initiated in June of 1981; a purchase order was signed with WANG in September of the same year; and the computer arrived in country and was installed in the central MOE facilities in January of 1982. During the same period an Information Systems specialist was hired with E&HR PD&S funds as were a Systems Analyst and a Programmer, both of the latter Honduran. Together, these individuals spent the period prior to the arrival of the computer conceptualizing the system; meeting with MOE staff to prepare them for the arrival of the system; and making final arrangements for the arrival of the computer.

4. Initiation of the Information Systems Activity and Initial Steps in the Institutionalization of an Information Department within the MOE:

What is referred to in this document as the Information Systems Activity formally began with the arrival and installation of the computer. Between January of 1982, when this took place, and the present efforts have been concentrated on the following areas:

- . Testing and installation of the system.
- . Initiating activities designed to identify bottlenecks and actions needed to improve the flow of information within the MOE.
- . Identifying users of the system.
- . Explaining to new MOE authorities the advantages of the system.
- . Preparing a general training plan for staff of the Information Department.
- . Implementing the first phase of the training plan in the area of computer programming.
- . Creation of a master file for schools, the first to be created in Honduras.
- . Entering into the computer a data bank for educational statistics that covers the 1981 and 1982 school years.
- . Installing COCENTS, a powerful computer software package that permits cross-tabulations of numerical data.
- . Full conversion of the payroll system from a rented IBM to the WANG system.
- . Developing procedures for processing jobs requested by MOE authorities and line offices as well as outside clients.

Three key actions taken during this period leading toward the institutionalization of the system were: (1) The creation, within the General Directorate of Planning, of a Department of Information in August of 1982; (2) The negotiation and signature of a computer maintenance contract with the local WANG representative in July of 1982; and (3) The formal designation of a Coordinator for the Information Department in August of 1982.

5. Key Accomplishments of the System over the past Seventeen Months.

The past seventeen months have been primarily a period of breaking in the system; explaining to high level MOE authorities and staff in line offices the advantages of an automated system; and, in general, salvaging information already available within the MOE that up until now has been processed manually. Key accomplishments over this period have been the acceptance of the system on the part of new MOE authorities; the initial steps taken toward institutionalizing the system referred to above; the conversion of the payroll system, being run on a rented IBM computer at a large annual cost to the MOE, to the WANG VS system 1/; and the training and graduation of five programmers, one operator, and 10 secretaries from a series of modularized courses given by A.I.D. contracted staff.

More tangible and visible achievements include the following:

Publication of the Statistical Yearbook for the 1981 school year in May of 1983, fully one year ahead of when it would have been published had it been tabulated manually.

Use of the computer to carry out an evaluation of the teaching staff of an agricultural secondary school, the results of which have been used to make key decisions related to improving the academic quality of the institution.

1/ The MOE has been paying IBM over \$101,000 annually for the rental of IBM equipment to run the payroll. Once the WANG telecommunications system is fully installed this annual operating expense will be eliminated and replaced instead with the annual expense for the WANG maintenance contract of approximately \$27,000. This amount includes maintenance costs for the system installed at the MOE as well as at the teacher payroll office.

Use of the computer to carry out a ranking of students according to grade averages which was subsequently used to grant scholarships to the vocational-technical institutes.

Installation of a telecommunications system connecting the MOE and the ESCALAFON to process the teacher payroll system.

Initiation of a capability to provide clients (e.g., the Vice-Minister, other GOH Ministries, private organizations) with data in a format useful for making decisions in a short time frame.

6. Evaluation of Activities to Date:

During February of 1983 an outside consultant was brought in to carry out an independent evaluation of the system. In the terms of reference for the evaluation the consultant was asked to assess the technical/institutional adequacy of activities carried out to date. The consultant was also asked to give an impartial opinion regarding whether A.I.D. should continue supporting the system and, if so, what the nature of this support should be.

Included among the results of the evaluation is the recommendation that "the MOE and USAID should continue with their plan to develop a follow-on Project to the Management Information Component of Project 522-0119". The evaluator further concluded that activities carried out to date under the Management Information Component of Project 522-0119 have been a success. This, however, is qualified with the observation that the System is relatively new and that it needs substantial help, particularly technical advice, to survive and so that the efforts and successes obtained until the point of the evaluation will not be lost. The consultant strongly recommended that the MOE take maximum advantage of the computer facilities to create a Management Information System within the MOE which, in addition to providing statistical/informational data, would be of use in overall administration and management. He also indicated that, in order to be effective, the system should be located at a responsible level in the MOE organizational structure, preferably at the Ministerial or Vice-Ministerial level as a staff office.

A key warning included in the evaluation is that patience and a great measure of foresight are required in installing a Management Information System of the magnitude being contemplated. An activity of this type is long term in nature, even under the best of circumstances. The

consultant further recommended that, before adding in new subsystems, a special effort be undertaken to conceptualize what the system can do and prepare a work plan which prioritizes new subsystems to be incorporated over the coming years.

C. Justification for a Follow-on to the Information Systems Project:

While clearly an important first step has been taken through the activities carried out over the past 17 months in introducing the system and beginning its institutionalization, equally clear is that, if the MOE aspires toward a complete Management Information System (MIS), this is the beginning of a multistage effort that could take 5 to 7 years to complete 1/.

The Project described below constitutes the second step in this effort. Instead of designing a 5 to 7 year Project, the objective of which would be to obligate the level of resources necessary to fully institutionalize the MIS, the Mission and the MOE have jointly decided that the wisest course of action at this point would be to identify the next logical segment and design this segment and carry it out before contemplating further stages. As currently conceptualized, the next segment - Phase II of the institutionalization of the MIS - would have four objectives:

1. Define the role of the MIS in the context of overall MOE operations.
2. Establish and leave operational a Management Information Systems Department in the MOE.
3. Continue to support and enhance subsystems already developed.
4. Carry out feasibility studies for priority sub-systems.

The Project described below has an estimated duration of eighteen months at a total cost of \$ 842,000 2/. At approximately one year from now both the Mission and the MOE will examine project progress to date and take a joint decision as to whether follow-on A.I.D. financing would be appropriate for future stages.

1/ Success in developing educational management information systems depends on availability of properly training personnel and computer resources, an adequate operating budget, and total commitment of all concerned.

2/ A.I.D.: \$ 737,000; GOH: \$ 105,000.

D. Linkages with Project 522-0167

The Rural Primary Education Project was authorized in August of 1980 for a total amount of \$13,000,000 - \$11,850,000 in loan funds and \$1,150,000 in grant funds. The Project is approximately midway in terms LOP. It has just been audited and an interim evaluation of the four project components is underway. An extensive reprogramming is also underway and should be completed by July 15, 1983.

The Phase II Information Systems activity is being included in the reprogramming as a fifth component of the Project. Unlike the rest of the Project, which is scheduled to terminate in mid 1985 (the PACD is April 30, 1985), Component 5 is scheduled to terminate on December 31, 1984.

Also unlike other components of Project 522-0167, which are carried out under the aegis of a Project Coordinator, Component 5 will be implemented relatively independently of the rest of the Project. With the exception of activities related to the implementation for the subsidiary system for school facilities (see Section II.B.3. below), where there has to be a close working relationship between both parties, the Coordinator will continue to operate much as has been the case up until now - reporting to the Vice-Minister of Education for Technical Affairs who, in turn, keeps A.I.D. appraised of implementation progress. The MIS Coordinator will keep the Coordinator of Project 522-0167 informed of Project activities and will be responsible for submitting every three months a report of implementation progress for inclusion in the report sent quarterly by the MOE Coordination for Project 522-0167 to A.I.D.

E. Other donor assistance

Outside of the OAS, which has financed a regional research study on educational outcomes through the Research Unit and has offered financing for study tours to Chile for two MOE staff to become acquainted with computer systems installed at the University and the MOE, no other donor assistance is ongoing or contemplated over the near or medium term for the MIS. This is not to say, however, that during the next phase of the Project the MOE, with A.I.D.'s assistance, will not actively seek other donor support (financing for other study tours, technical assistance).

Over the life of the Project and beyond it is expected that the MIS will increasingly be of assistance to other donors in providing basic information on MOE operations (enrollment projections, school locations, estimates of needs for classrooms, furniture and educational materials) of use in designing and implementing their projects.

II. PROJECT DESCRIPTION

A. Summary of the Logical Framework Matrix.

1. Program Goal:

The goal of the Phase II MIS Project is identical to that stated in the Logical Framework Matrix for Project 522-0167 - "Increase the coverage, retention, quality, and efficiency of the education system in Honduras". The indicators of goal achievement, means of verification and important assumptions also remain identical to those listed in the Project 522-0167 logical framework matrix.

2. Project Sub-goal:

The sub-goal of the MIS activity, heretofore to be also identified as Component 5 of Project 522-0167, is to "institutionalize within the MOE a system of information management with the capability to provide information in a timely manner for decision making and to support administrative and technical activities of the MOE". Listed below, for illustrative purposes, 1/ are several indicators of sub-goal achievement:

- Data base installed and operational and providing information in a form that is useful to decision making.
- MIS being used to support activities in the areas of curriculum and textbook development and distribution as well as in the area of teacher training.
- MIS being used to monitor student achievement and to provide a vehicle for better management of student scheduling, grade reporting, and tracking.
- Information from the MIS being used in the design of new projects (locally financed; financed by IFI's) as well as to evaluate projects that are ongoing.
- MIS being used to support MOE administrative functions: e.g., inventory, accounting, teacher payroll.

1/ One of the principal Project activities will be the conceptualization and institutionalization of the system and the definition of the role the MIS can play within the context of overall MOE operations. Annex A provides an overview of the conceptualization underlying the Management Information System.

MIS being used to provide basic information on MOE operations to users both within the MOE as well as from the outside (e.g., other GOH Ministries, private entities, IFI's).

Assuming all goes well 1/, the target date for the achievement of the full institutionalization of the MIS will be 1988.

3. Project Purpose:

A certain element of conservatism, plus the desire to prepare a design that continues to be both technically and institutionally sound, has led A.I.D. and the MOE to jointly take the decision to divide the institutionalization of the MIS into segments. The current project accordingly becomes Phase II in a multiphase effort leading toward full institutionalization of the MIS. USAID/H and the MOE have chosen to identify as the purpose of this Phase II project that of "continuing to support the development of a management information system in the MOE". By the end of the project it is expected that the following two conditions will have been achieved:

- a. MIS producing data in a form usable for decision making.
- c. MOE authorities aware of and accept role of MIS and are beginning to utilize information produced by the System to make administrative and technical decisions.

With regard to (a), it is expected that by the end of the Project three Annual Statistical Reports - for 1981, 1982 and 1983 - will have been produced on the computer and distributed and that preliminary and intermediate enrollment data for 1984 will have been made available to MOE technical and administrative staff in a form utilizable for decision making. In addition, a minimum of 40 special tables and charts will have been prepared for clients at their request and between 10 and 15 special analyses and reports will have been prepared. An additional 4 to 6 research studies will have been carried out under the

1/ A key assumption for the achievement of the project sub-goal is that future administrations will continue to support the institutionalization of the MIS and utilize information generated by the system to make technical and administrative decisions. If this support suddenly drops out over the near future, full achievement of the project sub-goal within the proposed time frame will not be possible.

auspices of the MOE Information Systems Department 1/.

With regard to (b) it is anticipated that MOE authorities will have utilized information generated by the system to make a minimum of 10 basic decisions regarding MOE operations.

4. Project Outputs:

Four sets of outputs are contemplated under this Phase II project. They are as follows:

Output 1: Role of the MIS in the context of overall MOE operations defined.

During the life of the Project the following activities will be carried out: (1) The System will be analyzed and a conceptual format, acceptable to MOE authorities, will be developed; (2) Administrative guidance for implementing the MIS will be prepared; (3) Requirements for institutionalization of MIS System over the long term will be established.

While these activities (further discussed under Section II.B.1 - Activity A: Conceptualization of MIS), must take place during the life of the Project, it is worth emphasizing that they should be basically accomplished in the early stages of the Project and not require the full eighteen month period. Once accomplished, the remainder of the Project time-frame should be devoted to enhancing, further defining, and more firmly institutionalizing the MIS.

Output 2: Management Information Systems Department formally established and functioning.

The following must take place during the life of the Project if this output is to be achieved: (1) A new Coordinator for the MIS system must be designated; (2) The Information Systems Department must be legally established; (3) Several new permanent positions must be created; (4) Information Systems staff require basic training in data and word processing techniques; research methodology; statistics; as well as an introduction to MIS concepts; and (5) The management of the Information Systems Department must be improved.

The activities described above are further delineated in Section II.B.2.

1/ See Annex B for a list of tables, charts, analyses, reports, and studies that have been produced to date by the Information System.

Output 3: Subsystem already initiated, supported and enhanced.

The principal subsystem in process is the subsystem for educational statistics. While this subsystem is not expected to be fully in place and operational by the end of the Project, it is expected that significant advances will have been made toward its institutionalization. The following activities will be carried out during the life of the Project in order to achieve this end: (1) Forms for collecting data from the field will be rationalized and reoriented so that data can be entered more efficiently into the computer; (2) Efforts will be taken to reduce bottlenecks in flow of information from the field to the Ministry, from the Ministry to the Information Systems Department, and within the Information Systems Department itself; (3) Actions will be taken, primarily through staff training, to produce in a timely fashion data (tables, graphs) needed for MOE administrative and technical decisions; and (4) Subsidiary systems (a computer retrieval system with data on progress in school construction and in-service teacher training activities under Components 1 and 4 of Project 522-0167; a system for linking the existing data bank with data generated in relationship to the literacy program) will be designed and implemented.

The Subsystem for educational statistics is further discussed in Section II.B.3.

Output 4: Initiation of feasibility studies for priority subsystems.

During the Project, and once the conceptual plan for the MIS has been prepared and agreed upon, one or more feasibility studies will be carried out for the priority subsystems identified. Pending the recommendations of the feasibility study(ies), resources available/needed to implement the feasibility study(ies), and implementation progress to date in other output areas, A.I.D. and the MOE may jointly decide during the Spring of 1984 to initiate implementation of an additional subsystem. While it is premature to identify for which subsystems feasibility studies will be carried out, the following are likely topic areas for these feasibility studies: educational facilities, human resources management, and secondary education (See Section II.B.4 for a more detailed discussion on this topic).

5. Project Inputs:

A.I.D. Project inputs include grant financed technical assistance and training in the amount of \$650,000; and reprogrammed loan financing in the amount of \$31,000 to be applied toward the purchase of computer hardware and software and supplies. An estimated \$191,000 of the existing GOH counterpart contribution will be reprogrammed to finance local costs (e.g., some salaries, costs for local travel and seminars, the creation of new positions for the MIS Department, computer maintenance, furniture and supplies, etc.).

Outside of the initial investment in the computer and a subsequent purchase to enhance computer operations, the key A.I.D. input to date has been and will continue to be technical assistance. Listed below is a brief description of the key technical assistance positions contemplated under the Project:

- . One general advisor, long term (18 person months).
- . One MIS advisor, long term (15 person months).
- . One Senior Systems Analyst, long term (17 person months)
- . One Systems Analyst, long term (17 person months). *
- . One Programmer, long term (17 person months) *
- . One Programmer, short term (5 person months) *
- . Short term T.A. (total of 6 person months).

The General Advisor will primarily be responsible for overseeing the implementation of activities related to Output 3 of the Project, while the MIS advisor will primarily be responsible for carrying out activities related to Outputs 1 and 4. They will collaborate jointly in the activities leading toward the achievement of Output 2. The Systems Analysts and Programmer will continue to assist in the institutionalization of the Data Processing Unit (Output 2). They will also participate in conducting the feasibility studies contemplated under Output 4. Short term T.A. will be used, as necessary, to provide support services in overall Project implementation. Among others, short term T.A. will be used to provide advice in the implementation of the subsystem for Educational Statistics as well as in the conduct of periodic evaluations of implementation progress. In this regard, one or two individuals are expected to be identified early on in Project implementation and this(these) individual(s) would come to Honduras for short periods on a periodic basis throughout the Project to provide technical advice.

A detailed description of the principal functions of the General Advisor, the MIS Advisor and the short term T.A. may be found in Annex C.

* Expected to be a Honduran PSC.

B. Description of Project Activities

For purposes of discussion and subsequent review, the Project is divided into four distinct but related sets of activities. Each set of activities is linked with one of the outputs listed above.

Described below, for each set of activities, is a brief summary of the current status of the respective activity followed by a description of actions to be taken during the life of the Project to achieve the outputs listed above:

1. Activity A: Conceptualization of the MIS

A management information system can, in a very short time-frame, be conceptualized and documented by drawing upon the experiences of the present staff and experience from outside sources. The conceptual design should capitalize on, rather than displace, efforts to date. To improve the overall ability to provide meaningful management information, many efforts have begun and have thus far established the foundation on which the conceptual plan may rest.

The Management Information System is in the process of being formally defined and conceptualized in order to provide for an organized process of identifying information needs, collecting and processing data, and providing information for decision making. The plan shall lead to an automated delivery system of information, flowing from the school level through the departments to the Ministry of Education and back. (See Annex A for a preliminary conceptualization of the MIS).

As envisioned, the MIS will include six major subsystems: (1) Educational statistics, (2) Human Resource Management, (3) Finance, (4) Curriculum, (5) Facility, and (6) Student. The payroll application may or may not be considered part of the Human Resource Management Subsystem. Of the six subsystems proposed, the Educational Statistics subsystem is developed and installed. Also, the payroll application has been converted from the IBM computer to the Wang computer.

The Educational Statistics Subsystem is operational and has proven to be a useful tool to the MOE; it is now producing the annual educational statistical document. Though the subsystem is operational, efforts must be made to enhance the system and to provide proper maintenance over the life of this project.

The payroll application is presently in a test mode of operation (making parallel runs between the Wang computer and the IBM computer) and will continue to be until all concerned are assured that the application has been properly converted.

To provide the long-range success of the MIS, there are several activities that must be accomplished during the next eighteen months regarding conceptualization and institutionalization. These activities include:

- a. Finalization of the MIS conceptual plan and obtaining approval from both USAID and the MOE.

This activity should be accomplished by December 31, 1983 or no later than three months after the hiring of the new MIS Coordinator and the arrival of the MIS advisor.

- b. Arriving at an organization definition for the MIS and reassigning the Information Systems Department to the appropriate level within the MOE hierarchy.

This activity will be carried out concurrently with Activity a, above. For a further discussion of this topic see Section II.B.2.a. below.

- c. Orienting key MOE personnel to the MIS conceptual plan.

This would include: (1) Management Information System (MIS) staff including the Coordinator, the chief of the Data Processing Unit, Systems Analysts, Programmers, and staff from the Research and Statistics Units; and (2) The Minister, Vice-Ministers, Directors General, Department Directors and Supervisors, and all other interested parties who may be potential users of the MIS.

The above levels of personnel must completely understand and support the concept in order to gain acceptance and cooperation in the development, installation and use of the overall Management Information System. It is anticipated that this activity will take approximately two months.

- d. Development of management tools and documents which support the MIS concept.

After the MIS conceptual plan is finalized and approved and after the key positions in the MIS

organizational structure are filled, certain tools and documents must be developed for managing the data/information within the MIS structure. These include:

- 1) Data element directories - A compilation of data element titles and definitions proposed for retention in the six broad areas of the MIS system: (1) educational statistics, (2) finance, (3) student, (4) human resource management, (5) curriculum and (6) facilities.
- 2) Data collection plan - A plan which lists, according to due date, those data collection instruments and other documents which are tentatively scheduled for distribution for data collection.
- 3) Policy and procedure manuals - Manuals which describe the policies and procedures to be followed in the preparation and distribution of data collection instruments at all levels of the Ministry of Education.
- 4) Data review procedures - A manual providing specific procedures for assisting personnel in the MOE in obtaining data processing services. This manual will also establish a review procedure for approval of new data items to be collected and processed.
- 5) Forms control - A document describing the policies and procedures to be followed in the preparation and distribution of data collection instruments.

Each of the above must be accomplished during the life of the project. The following positions/units are primarily responsible for assuring that each activity is accomplished in a timely manner:

Activity a: Finalizing the MIS conceptual plan - This activity is under the responsibility of the General Advisor, the MIS Advisor, the Coordinator of the MIS, and the Vice Minister for Technical Affairs.

Activity b: Organization definition - Primary responsibility for carrying out this activity will lie with MOE authorities including the MIS Coordinator, the Minister and both Vice-Ministers. The MIS

Advisor and the General Advisor will be available, as needed, to assist in arriving at this organizational definition.

Activity c: Orientation of MOE personnel in the use of the MIS conceptual plan - This activity will be under the responsibility of the General Advisor, the MIS Advisor, and the Coordinator of the Information System.

Activity d: Development of management tools and documents which support the MIS concept - This activity will be under the responsibility of the General Advisor, MIS Advisor, Coordinator of Information Systems and perhaps a short term technical advisor.

2. Activity B: Formal Establishment of the Information Systems Department

Over the past year an Information Systems Department has been organized and, while it is not legally constituted, it is recognized for operational purposes as an established entity within the General Directorate of Planning. The Information Systems Department is presently composed of three units - a Research Unit with eight direct-hire staff positions 1/; a Statistics Unit with 12 direct hire staff and 3 contract staff; and an ad-hoc Data Processing Unit which is composed of a chief, one operator, and five programmers. In addition, six MOE personnel have recently been assigned to the Information Systems Department. These individuals are responsible for data transcription. In addition there is a person assigned full time to the role of systems coordinator. With the exception of the chief of the unit, two of the programmers, and the coordinator (the former three are currently under A.I.D. contract), the remainder are MOE direct hire or contract staff who have been assigned to these roles and whose positions will be formally created in January of 1984. The operator and the programmers are graduates of a series of modularized training courses conducted by A.I.D. financed systems analysts during 1982 and early 1983. All are presently receiving on-the-job-training.

1/ Of the eight full-time positions, two are assigned to other units, thus leaving six individuals working full-time in the Research Unit.

In terms of physical infrastructure, various changes have taken place within the MOE to accommodate the computer equipment and the requirements for placing support staff in a location convenient to the computer facilities. Four adjacent rooms on the third floor of the MOE have been vacated for this purpose. The room to the far corner (and the best protected) houses the CPU and the computer library. Directly adjacent to this room is the room occupied by the Statistics Unit and next to it is the room occupied by the Research Unit. The MOE has recently assigned a fourth room to house the A.I.D. contracted systems analyst and programmers plus the recently graduated programmers. Several improvements (installation of partitions and doors) have been made in these rooms and in the outside corridors in order to (a) further safeguard the computer facilities; and (b) make passage through the rooms more convenient. All of these improvements have been financed with counterpart funds.

Under the Project a series of steps will be taken to assure that the efforts directed toward creation and formal constitution of the Information Systems Department come to fruition:

- a. Legal establishment of the Information Systems Department: By no later than January 31, 1984 the MOE will formally create the Information Systems Department and assign to it the new positions needed in order for the Department to become fully operational. Two consultants (the evaluator and an MIS specialist brought in to participate in the detailed Project design) have recommended that the Information Systems Department be located either directly under the Minister or one of the Vice-Ministers thus ensuring the Department the authority necessary to carry out day to day operations. The Minister is receptive to this proposal and has indicated that her preference would be to have the Information Systems Department become a staff office to the Vice-Minister for Technical Affairs. During the next few months this proposed change will be studied closely and a strategy developed for undertaking the transition. Once the transition occurs the Coordinator of the Information Systems Department will report directly to the Vice-Minister.
- b. Creation of permanent positions: The following permanent positions will be created as of January 31, 1984:

1) Computer Unit

- One chief of the computer unit
- One systems analyst
- Two programmers
- One operator
- One word processing supervisor

2) Research Unit

Steps will have been taken, by January 31, 1984, to assure that all eight positions currently in existence are filled. If this is not possible, steps shall be taken to reassign new personnel to assure that eight qualified persons are working full-time in the Research Unit.

3) Statistics Unit

The Statistics Unit is at present fully staffed. No new positions will be created during the life of the Project.

During April of 1984, within enough time to make provisions for creation of additional positions in 1985 if they are needed, a detailed review will be undertaken of the staffing pattern of the Information Systems Department and steps taken to revise/add new positions.

c. Naming of a new Coordinator of the MIS unit:

In August of 1982 a Coordinator was named to head the Information Systems Department. In October of the same year the Ministry of Finance sent A.I.D. a letter committing the GOH to creating a permanent position for the Information Systems Coordinator starting January 31, 1983.

For reasons described elsewhere (see Section III - Technical Analysis), the individual assigned to this position has not worked out and the MOE and A.I.D. have jointly agreed that this individual must be replaced with someone who has the background, skills, drive, and interest to carry out the job in an effective fashion.

A revised scope of work has been prepared for this position, as has a list of background and qualifications desired of the individual who will fill it (see Annex D). Actions are already being taken to

search for an individual who can fill these requisites. Plans call for identifying suitable candidates and filling the Coordinator position by no later than September 1, 1983. The MOE and A.I.D. have agreed that A.I.D., on an informal basis, will have a say in the final selection of the candidate to fill this position. There is further agreement that A.I.D., again on an informal basis, will participate in the interim evaluations of this individual's performance to be carried out after six and twelve months.

- d. Staff training. This activity is key to the success of the Phase II effort and to the ultimate attainment of the sub-goal of the project which is the institutionalization of an MIS.

Under the Project, training will be provided as follows:

For the new Coordinator. Depending on his/her background and qualifications, the Coordinator will be trained in such areas as: Management Information Systems concepts as applied to the Honduran educational system; MOE organization and structure; orientation to existing subsystems and applications; and basic concepts of Management Information Systems. Training will be carried out both by the MIS Advisor and the General Advisor on-the-job and through short courses offered both in Honduras and the U.S.

For other staff working in the Information Systems Department. Training will be provided locally in computer programming and word processing. Training will also be provided locally in research methodology and descriptive statistics. In addition members of the Information Systems Department will receive short term training in the U.S. in Management Information Systems as applied to Education.

Seminars/short courses designed to orient users/participants to the system will also be offered to high level MOE officials (Minister, Vice-Ministers, Directors General) as well as staff from other line offices.

Given the various facets of this activity, the reader is referred to Annex E for a summary of training activities to date and a detailed description of staff training activities contemplated under the Project.

e. Ordering and installation of new computer equipment

The majority of the equipment necessary over the near term to operate the Information System currently is in place and operational:

1) At the central MOE offices:

- 1 CPU, 384KB real memory
- 2 Disk Drives, 90MB and 75MB, 15F/75R
- 1 Disk IOP, 4 port
- 1 IOP Telecommunications
- 1 Tape Drive, 9 track, 1600 BPI
- 1 Tape IOP
- 3 Workstations, 2246S
- 4 Workstations, 2246C
- 1 Workstation IOP, 8 port
- 1 Printer, 600 LPM
- 1 Printer, 40 CPS
- 1 Supply Fault Relay
- 2 Modems, Racal Milgo
- 1 Operating System, System Utilities
- 1 Word Processing System Software, Spanish
- 4 Compilers: RPGII, COBOL, BASIC, ASSEMBLER
- 1 Set of Manuals for above items

2) At the Escalafon:

- 1 Unit to share a modem with 4 workstations
- 3 Remote workstations that include a communication controller
- 1 250 LPM Band Printer
- 2 Modems, Racal Milgo
- 1 Voltage Regulator, 1 KVA

In addition, the following software has been installed and is operational:

- COCENTS
- STATPACK
- MATHPLANNER

The only additional hardware purchases anticipated during the life of the Project are the following:

- One dot matrix printer suitable for producing bar charts and graphs.
- One high resolution terminal for producing graphics.
- Software package necessary for producing computer graphics.

One microcomputer terminal with 80 CPS dot matrix printer and 10 megabyte harddisk necessary for the school construction subsidiary system under Project 522-0167

Three disk packages -two 15 megabyte one 75 megabyte.

All of the above are expected to be purchased, installed, and fully operational by January of 1984. This equipment will be financed with A.I.D. loan funds. Appropriate justifications for the purchase of this equipment may be found in Annex F.

f. Improvement of management of Information Systems Department:

The Information Systems Department is still in the process of being organized. The Department has absorbed two existing units - the Research Unit and the Statistics Unit - and is in the process of creating a Data Analysis Unit. While documents exist which describe the functions of each unit and each permanent position carries with it a position description, both were developed for a situation in which these units operated independently. Position descriptions have just been prepared for members of the Data Processing Unit.

More importantly, the Information Systems Department is just now beginning to define the formal and informal reporting relationships of individuals within the Department and the mechanisms for communication both with the Coordinator and between the Units. Administrative manuals are in the process of being prepared which clearly identify these reporting relationships as well as identify a set sequence of steps that must be taken to obtain access to the computer facilities.

Under the Project, steps will be taken to both formally and informally establish the necessary linkages between these Units. The documents specifying the functions of each Unit will be revised; position descriptions will also be reviewed to see if they need to be revised; and the work initiated on developing basic administrative manuals will be completed. The General Advisor and the MIS advisor will jointly provide guidance to the MOE in carrying out these activities. By the end of the Project it is expected that all Information System staff will be clearly

aware of the role of the Information Systems Department in general, their respective roles within the Department, and will in their day to day activities be following appropriate procedures for passing information to and from the Coordinator as well as between units.

3. Activity C: Support and Enhancement for the Subsystem for Educational Statistics

During the past 17 months since the computer was installed, activities have been primarily centered around the creation of a sub-system for educational statistics. A data bank has been created which includes enrollment data, data on schools, classrooms, and furniture for the preprimary, primary and secondary levels. Eventually the bank will be enlarged to include detailed information on teaching and administrative personnel, equipment, and budget. Annual enrollment statistics, tabulated up until now manually by staff from the Statistics Unit, are being entered into the computer. As of the date of drafting this PP amendment, the 1981 MOE Statistical Report - the first Annual MOE Statistical report to be produced by computer - has been completed. It has formally been conveyed to the Minister and should be published by July of this year. Tabulations of preliminary enrollments for the 1983 school year will be completed shortly and the 1982 Statistical Report is scheduled for completion this coming August.

As currently conceived, the Subsystem for Educational Statistics is the central element of what will eventually be an overall data base for MIS functions. Once it is fully installed and functional, in addition to utilizing it to produce annual statistical reports, MOE administrative and technical staff will have a valuable information resource that they can draw upon to make policy as well as routine administrative and technical decisions. The advances made to date in initiating this subsystem, while significant, represent the beginning of a long-term effort.

During the life of the Project the following actions will be taken to further the enhancement of this subsystem:

- a) Rationalization of data collection forms: The data currently being inputted into the computer is drawn from a set of forms designed for manual tabulation. These forms have been utilized since 1977 by the General Directorate of Planning to collect educational statistics from the field. Each year new forms are sent out through the departmental and local supervisors

to collect data directly from schools. In addition to these forms, there are other sets of nearly identical forms that are distributed by other MOE offices to schools, tabulated at the departmental level, and transmitted back to these offices for use in basic reporting functions.

Between now and the end of CY 1983 staff from the Research and Statistics Unit will work with staff from the Computer Unit as well as other MOE departments that collect enrollment data in order to accomplish the following:

- . Reduce the current duplication in functions by preparing one form to be sent to teachers instead of two.
- . Revise the format of this one form so that the data generated can be entered into the computer with greater facility. 1/ It is expected that these revised forms will be ready for distribution to teachers in February of 1984. Staff from the Research and Statistics Unit, under the guidance of the General Advisor, will pilot test the forms in the field during the latter part of this year. When the 1984 school year begins they will assist in distributing these forms and in providing the guidance necessary to departmental and regional supervisors so that they can in turn guide schools directors in filling them out. ESF local currency funds will be used to finance field expenses (travel and per diem for Information Systems staff) necessary to carry out this effort.

b) System of information flow established and functioning:

In spite of some positive strides over the past seventeen months, a number of bottlenecks exist in information flow, both toward the Information Systems Department, within the Department, and from the Information Systems Department outward.

1/ Once the dot matrix printer referred to in Section II.B.2.d. arrives, it will be possible to run off forms that include relevant data submitted in the prior year and send these forms to teachers for their correction, and completion instead of asking them to fill in the forms from scratch.

Information flow from the field to the
Information Systems Department:

- The annual enrollment data that comes in from the field goes through a circuitous route and is often delayed in arriving at the central MOE offices; not infrequently data is lost, either through the local mail system or in manual transmission from one person to the next.
- The data that arrive at the Unit are often incomplete or incorrect.

Flow of information within the central
installations of the MOE but outside of the
Information Systems Department.

- Once the data arrives at the central MOE offices it goes through several persons and offices who are responsible for receiving the data, in some cases processing it before it arrives at the Information Systems unit, and transmitting it to the Unit.

Flow of information within the Information
Systems Department.

- Once the data forms arrive they must be cleaned, ordered, coded, transcribed, processed, and tabulated. This can be a very cumbersome process.

Flow of Information outward from the Information
Systems Department to other offices within the
Ministry:

- Very little is being done at present to process educational statistics in a form that is of use to decision makers. There is a lack of clarity as to who the potential users of this data are; what exact information needs they have; when they have need of these data and in what format.
- It is very unusual for staff at the line and local level (e.g. local supervisors, school directors, teachers) to even have any access whatsoever to this information.

Under the Project work initiated on detecting the bottlenecks in information flow will continue. With the joint guidance of the General Advisor and the MIS advisor, a detailed analysis of gaps in information flow will be carried out and recommendations will be provided to appropriate MOE authorities of actions that need to be taken to resolve these bottlenecks. Staff from all of the Units of the Information Systems Department will be involved in this activity as will staff from adjacent MOE offices and support personnel (supervisors, school directors) in the field. ESF local currency funds will finance the field expenses (travel and per diem) required to carry out this effort.

By December 31 of 1983 it is expected that these bottlenecks will have been fully identified and that the MOE will have taken some of the basic decisions (revisions in regulations, procedures, if necessary personnel) necessary to permit actions to be taken to alleviate these bottlenecks.

c) Timely production of data (tables, graphs) needed for daily MOE decisions:

With the creation of the data bank on educational statistics and the installation of the COCENTS ^{1/} package in March of 1982 the MOE has acquired two powerful tools that make possible providing clients (both within the MOE and without) with data in a timely basis and in a form appropriate for taking decisions. Examples of ways in which the Educational Subsystem have been able to respond rapidly to client requests for information include the following:

In January the Vice-Minister for Technical Affairs submitted an urgent request for information on secondary enrollments for use in a radio forum. The data was needed immediately (a 24 hour time deadline was given) and it required producing new tabulations that did not appear in the Annual Statistical Summary. The necessary tables arrived on the Vice-Minister's desk within hours.

^{1/} COCENTS (Cobol Census Tabulation System) is a powerful software program designed to process and produce sets of tables in the form of crosstabulations. It is specifically designed to work with data produced by Census and/or by research.

In March a meeting was held with the President of Honduras to discuss plans for the literacy program, scheduled to begin in July of this year. Printouts on school locations and enrollments were taken to the meeting to illustrate to the President that the Ministry had among the existing schools in the target area the quantity of teachers necessary to provide backstop support to the literacy program.

In April of this year the Ministry of Transportation approached the Ministry of Education with a request for information on schools, their names, and locations for a target area of the country where there is a program to build access roads. This information was made available within two days.

Over the life of the Project priority will be given to continuing to provide a rapid response of the nature described above. Forms to be filled in by clients seeking information have been prepared and are currently being used to screen applications. A key part of the training to be carried out under the Project (see Annex E) will focus on ways of supplying the tables, graphs, and bar charts, etc. in a form suitable to clients within a rapid time frame.

d) Design and implementation of subsidiary subsystems:

As more and more individuals have become aware of the ways in which the subsystem for education statistics can serve them, there have been increasing requests for adding subsidiary data elements into the system. One which has just begun to be implemented is an auxiliary subsystem for the literacy program. Another is an auxiliary subsystem for keeping track of progress in classroom construction and renovation under Component 1 of the Project to which this activity is now being adscribed.

Over the life of the Project the second auxiliary subsystem referred to above will be developed and implemented and actions may be taken to develop and implement the first. Requests to establish additional subsystems will be examined on a case by case basis in order to determine: feasibility, resources (human and material) required; and other priorities that would in any way conflict with the addition of these subsystems.

Responsibility for the design and implementation of these auxiliary subsystems will reside with the staff of the Information Systems Department. The General Advisor and the MIS advisor will be available, on an as needed basis, to provide advice and guidance in carrying out these activities.

4. Activity D: Initiation of feasibility studies of priority subsystems.

The purpose of a feasibility study is to develop a plan for designing, testing, implementing, and maintaining a system application (in this case a subsystem). The selection of areas for the feasibility study generally are mandated by higher management, initiated by the information systems development group (MIS) or selected by a data review committee. Proposed system changes leading to feasibility studies normally fall into one of three categories: (1) adding complete new subsystems (which will make up part of the total MIS); (2) major changes to existing subsystems; and (3) computer hardware additions and/or replacements. A feasibility study goes beyond merely determining the feasibility in terms of cost/benefit; it also includes extensive data gathering, analysis and design of the overall applications (subsystem) process.

During the Project a series of feasibility studies focusing on priority subsystems will be carried out. While most will begin subsequent to the preparation and approval of the conceptualization of the MIS (e.g. starting on or about January 31, 1984) work on one or two may be initiated during the CY 1983 calendar year. 1/

Pending the recommendations of the feasibility study(ies), resources available/needed to implement the feasibility study(ies), and implementation progress to date in other output areas, A.I.D. and the MOE may jointly decide to initiate implementation of an additional subsystem. While

1/ An important study to be carried out as soon as possible, and by no means later than the end of the calendar year, will focus on hardware utilization. This study will explore the costs and benefits of upgrading the computer hardware by increasing memory, storage, terminals, etc. vs the costs and benefits of changing the workday schedule to allow for staggered and/or multiple shifts. No major investments will be made in new computer hardware until this study has been carried out and the recommendations have been thoroughly reviewed.

it is premature to identify for which subsystems feasibility studies will be carried out, the following are likely topic areas for these feasibility studies: educational facilities, human resources management, and secondary education.

Responsibility for the design and conduct of the feasibility studies will reside with the MIS advisor, the Systems Analyst Advisor, the Programmer Advisor, the Coordinator of the Information System and the Chief of the Data Processing Unit. As necessary one or more short term consultants will be drawn in to assist in the design/implementation of these studies.

III. ANALYSES

A. Technical/Institutional Analysis:

This section covers several themes considered as critical in determining the technical/institutional feasibility of the Project during its life and beyond. Primarily addressed is the technical and institutional feasibility of Activities B and C of the Project. The key technical/institutional concerns related to Activities A and D are: (a) finding a qualified MIS advisor; and (b) MOE interest in/commitment to following up on the recommendations of the key Project advisors. The former is addressed in Section 5 below. The latter will be addressed in the Social Soundness Analysis.

1. Technical Adequacy of Activities Carried out to Date under the Project:

As has already been indicated, an interim evaluation of project activities was carried out in February of this year. As part of the terms of reference the evaluator was asked to comment on the adequacy of programs and systems developed/installed to date; staff training; and hardware.

Overall the evaluator's comments were very positive. He concluded that the programs and systems developed were well done and that the A.I.D. contracted personnel responsible for developing these programs and systems had done a very careful job of documenting them. The training given by these individuals in programming techniques was also seen as technically adequate.

2. Technical Adequacy of Activities Planned under the Project:

The evaluator in his report also provided recommendations for future activities, the majority of which have been taken into consideration in designing the Phase II project. They are as follows:

Recommendation: That the contracts of the A.I.D. financed Systems Analyst and Programmers be extended and that every attempt be made to incorporate these individuals into permanent MOE direct hire positions.

Actions to be taken under the Project: With the exception of one Systems Analyst, whose contract was not renewed because his services were no longer needed, the Systems Analyst and one of the Programmers who have been working under A.I.D. contract will have their contracts extended. The other programmer will, in August, pass to an A.I.D. financed host country contract in preparation for his transition to becoming officially named as Chief of the Data Processing Unit in January of 1984.

Recommendation: In the future the MOE should concentrate its efforts on upgrading the skills of individuals who are already trained as programmers through on-the-job training and refresher courses. Entry level programmers should either be hired from the outside or, if selected from within the MOE ranks, should be sent out for training.

Actions to be taken under the Project: The programmers, recently trained under the Project, will continue to receive on-the-job training. They will also be given the opportunity to attend refresher courses to be offered outside of the Ministry. Arrangements will be made during 1984, when it is anticipated that more programmers will need to be trained, to either send MOE staff to a local firm for training or look for qualified programmers available in the local market.

Recommendation: Every attempt should be made as urgently as possible to incorporate the individuals who completed basic training in COBOL in late February into the computer unit. Provisions should be made to create permanent positions for these individuals and they should begin receiving on-the-job training as soon as possible.

Actions taken/to be taken under the Project: In March of this year the four individuals who passed the COBOL course with the highest marks were incorporated into the data processing unit two in programming positions, one as computer

operator, and one as word processing manager. As of the time of drafting this PP all four individuals were receiving on-the-job training. A.I.D. has just received a letter from the MOE providing a commitment to take the steps necessary to create permanent positions as programmers for these individuals starting in January of 1984.

Recommendation: Unless major new subsystems are to be installed, there will be little need for new hardware in the immediate future.

Actions to be taken under the Project: For the present time there are few new hardware needs. Pending the results of the feasibility studies, the decision may be taken during CY 1984 to purchase some additional hardware, although again any additional hardware needs should be kept to an absolute minimum.

3. MOE Capability to Operate and Maintain the system During and After the Life of the Project:

This has been a key concern throughout the Project design stage and one that has within it several potential issues. Potential issues and steps taken/being taken to resolve these issues are described below.

a. Location of the MIS within the overall MOE organizational structure:

There is, at the time of writing this document, agreement in principle that, if the MIS is to achieve the stature and authority it needs in order to operate effectively, it must be relocated at a higher level than it currently is in the MOE hierarchy - preferably as a staff office to the Minister or one of the two Vice-Ministers. Also recognized is that this is a move that can be made only after it has been subjected to careful study and a tactful lobbying campaign has been carried out. Among others, it could mean removing as many as one third of the personnel of the General Directorate of Planning (staff from the Research and Statistics Unit) from their current location within the MOE hierarchy.

During a recent discussion with the Minister and the Vice-Minister for Technical Affairs on this topic, it was concluded that the most logical location for the Information Systems Department would be as a staff office that reports directly to the Vice-Minister for

Technical Affairs. This, however, will have to be subjected to careful study. In the meantime, A.I.D. and the MOE have agreed to adopt the following plan of action:

The GOH will agree, as part of the Project Agreement, to carry out the necessary study in order to determine when and how this reassignment should take place and to formally make this move by no later than December 31, 1983.

A.I.D., as a party in the Project, will receive a copy of the study. If A.I.D. has any objection, in terms of implications for the Project design, to the decision taken, A.I.D. would immediately advise the MOE of these objections and steps would be taken to arrive at a mutually satisfactory resolution.

While primary responsibility for carrying out this study will rest with MOE authorities (the Minister, the Vice-Ministers, the MIS Coordinator), advice and guidance from the MIS Advisor and the General Advisor will be sought on this matter.

- b. Skills and capability of the MIS Coordinator to allocate resources and otherwise efficiently run the system.

The single most important position determining the success of the System is that of the MIS Coordinator. An effective Coordinator who understands the requirements of his/her job can play a very effective role in guiding policy of the MIS unit; allocating resources; making sure that the right types and level of information for decision making get to MOE authorities in a timely fashion; supervising feasibility studies; and overall guiding the implementation of new subsystems.

As was indicated in Section II.B. above, the individual who is currently in this position is not carrying out this function in an effective fashion and the decision has been taken by the Minister to remove this person from this position and replace the person with someone who has the skills, drive, and qualifications to carry out the job. A job description for this individual may be found in Annex D. At the time of drafting this document three individuals have been identified as candidates for this position. It is hoped that this person can be identified and that he/she can be incorporated into this position by no later than September 1, 1983.

A key issue in the selection of the new Coordinator is salary level and the capability of the MOE, with the current amount allocated for this position (\$1,000/month), to find someone with the necessary background and qualifications. At the current salary structure or slightly above ^{1/}, it will obviously not be possible to find the "ideal" person. On the other hand, if arrangements were made through the Project to bring someone on at the appropriate salary level, which would by definition necessitate that A.I.D. finance this person's salary, it would be extremely difficult - if not impossible - for the MOE, at the end of the Project, to offer this person a permanent salary that would match the salary the person was earning under A.I.D. contract.

The solution proposed below, while not ideal, is the best that can be offered given the circumstances summarized above:

Given that this is a position that must be institutionalized, find a person who would be willing to accept the current salary level allocated for this position or a salary slightly above this amount.

Accept the fact that this person will not fulfill all qualifications desired and build into the Project design a strong on-the-job training experience as well as an internship experience in the U.S. for several months during 1984 which would permit upgrading the skills of this individual in the area(s) where he/she is not as strong as desired.

Assure that the MIS advisor and the systems Coordinator be allotted the time needed to provide this person with the desired training level (i.e. especially at the beginning avoid overburdening both with too many responsibilities for systems implementation that would detract from this training, allocate the time necessary for the Coordinator to be sent to the U.S. for an extended internship).

^{1/} It will not be possible to go much higher than \$1,000/month as, within the MOE structure, the salaries of individuals at the Directorate General level begin at \$1,250/month.

Build into the Project design an agreement between A.I.D. and the MOE that A.I.D. would have an input into the selection of the Coordinator and a role in the evaluation of the Coordinator after a six and a twelve month period.

- c. MOE commitment to include in the annual budget the funds necessary to cover the computer maintenance contract.

Funds have been made available in the CY 1983 budget to cover the computer maintenance contract and, as of the time of drafting this amendment, the maintenance contract is at the Presidential Palace awaiting signature. The MOE has indicated that it will be including in the 1984 budget the funds necessary for the maintenance contract. The financial plan of the amendment to the Project Agreement for Project 522-0167 will include the counterpart funds necessary for this contract.

- d. Reservation of funds necessary for materials and supplies.

Once the system now working at the ESCALAFON on the IBM computer is working on the WANG computer, more than \$80,000 annually in operating expenses will be saved. It is expected that part of this money will be used to purchase materials and supplies for the WANG computer and to otherwise cover support expenses for the computer system. While it is not at this moment entirely clear what amount will be reserved, this will be an item pending for negotiation prior to signature of the Project agreement.

- e. Arrangements for acquisition, as needed, of additional hardware.

At this point in time, given limitations in the MOE budget and austerity measures, the MOE could not be expected to finance additional hardware with counterpart funds. Accordingly loan funds have been programmed into the Project for purchase in late CY 1983 of small amounts of hardware.

- f. Creation of permanent positions necessary to assure the continued functioning of the system.

A series of courses in computer programming were recently completed, producing four entry level

programmers as graduates. The individuals who have graduated from the programming courses are now doing basic programming and receiving training on-the-job in the computer center. A.I.D. should be receiving a letter from the Minister this week indicating her intention to create permanent programmer positions at competitive rates for these individuals starting in 1984. The Minister has also agreed to formally create a position for an operator and for the chief of the computer unit. The individual selected for the latter position has been under A.I.D. contract as a programmer for the past year and a half and has done an outstanding job. Given his background with the Information System and his performance to date, a better person could not have been selected for this position.

4. Feasibility of Carrying out Project Activities in the Proposed Time Frame:

a. Prioritization of activities:

An important outcome of the evaluation carried out in February was the observation that, before adding in new subsystems, the MOE should dedicate its efforts to: (a) completing the installation of the subsystem already initiated; and (b) completing the conceptualization of the role a MIS could play in the MOE and, included as part of this task, a prioritization of additional subsystems to be incorporated in the future. The subsystem already initiated - Educational Statistics - is key to all future subsystems as it provides an important data base that can be tapped for other activities of the MIS. As can be seen from the Project Description, the only major subsystem planned for implementation during the life of this project is Educational Statistics, although it is possible, after the feasibility studies of new priority subsystems have been carried out and the interim evaluation is completed, that the MOE and A.I.D. may mutually agree to initiate an additional subsystem. The decision to initiate any new subsystem(s) during the life of the Project would depend on the following factors:

Availability of resources (computer hardware, software, technical assistance, and MOE staff) needed to carry out the new subsystem; need to acquire new resources; and feasibility of acquiring these new resources within the desired time frame.

MOE willingness to take basic administrative/managerial decisions necessary to assure the effective implementation of the new subsystem.

Overall implementation progress in other Project activity areas (e.g. institutionalization of the System, staff training, and progress in implementing the education statistics subsystem) and the extent to which adding a new subsystem would detract from other activities ongoing.

b. Availability of needed human resources to carry out Project activities:

The decision to immediately assign MOE staff to the computer unit as a result of the evaluator's recommendations and the recent decision to assign six persons full-time as data transcribers to the Information Systems Department are both very concrete and positive indications of the MOE's commitment to this activity. Built into the Project design (see Project Description, Section II.B.2.b.) is a period in April-May of next year in which MOE staff and A.I.D. contract staff will carry out a joint review of needs for new staff positions in time to, if necessary, include a request for new staff positions in the 1983 MOE budget request.

c. Availability/allocation of needed computer hardware:

As more and more mechanized applications are being implemented and with the increasing number of computer users (both systems development personnel and application users), there will soon come a point in time when the availability of computing resources will reach a limit for the normal workday. When this happens, there are basically two alternatives:

Upgrade the computer hardware (increase memory, storage, terminals, etc.); or

Change the workday schedule to allow for staggered shift and/or allow for multiple shifts.

The MOE recognizes that the time has come to begin analyzing these alternatives in more depth and has agreed, as part of the Project design (see Section II.B.4.) to carry out a feasibility study by December 31, 1983 which explores the costs and benefits of these alternatives and/or a combination of the two. No new equipment will be purchased using A.I.D. funds until this study has been carried out.

5. Strategy for Identifying the MIS Advisor:

The two key advisory positions under the Project are the General Advisor and the MIS Advisor. The General Advisor is already on board. All that is necessary under the Project is amending his contract to extend it through December 31, 1984. The MIS advisor position is new and steps must be taken as soon as possible to identify and contract a suitable candidate. The scope of work for the MIS Advisor may be found in Annex C.

One of the key activities early on in the Project will be to identify a pool of suitable candidates for this position and to take the steps necessary to interview these candidates and select the one who appears most suited to carry out the task. Given that a person with a very specialized background is being sought for this position (e.g. a person who, in addition to being an MIS specialist, has a strong background in MIS systems as applied to education and is fluent in Spanish) it will be necessary to adopt a special plan of action in order to identify suitable candidates.

One proposed strategy for identifying candidates was raised during the course of the Project design activity. The MIS specialist who has participated in Project design activities - an individual with over 25 years working in the MIS area, 15 years in MIS as applied to education - has offered to assist in identifying suitable candidates. Upon returning to the U.S. this individual will use a variety of methods (e.g. advertising in educational and computer magazines and newsletters; going through his network of contacts) to identify candidates who have the background and educational experience required for the job. This individual will personally screen promising candidates and recommend to USAID/Honduras and to the MOE a minimum of three candidates who appear to have the necessary requisites to carry out the consultancy. USAID/Honduras, with Project funds, will invite these candidates to Honduras under invitational travel orders so that they can be interviewed and a final selection made.

6. Impact of the MIS on the Quality of Education in Honduras:

Once completely installed and operational, the MIS, if used effectively, can have a significant impact on the quality of education in Honduras. This impact, however,

will be indirect rather than direct. Examples of ways in which the MIS can impact on the quality of education follow:

Subsystem for Educational Statistics:

- With fewer reports to fill in and send annually to the central MOE offices, teachers and school directors will be freed up to spend more time on teaching and other administrative functions.
- Information gathered through this subsystem can also provide guidance for (1) carrying out teacher assignments; (2) determining numbers of textbooks needed annually and ensuring that, once made available, these textbooks will be distributed when and where they are needed; and (3) determining new school and classroom needs in areas where population growth exceeds the capacity of existing physical facilities to attend to student needs.

Human Resources Subsystem: With more accurate information regarding the background and training of teachers, a system can be developed for programming courses designed to upgrade their skills so that they can be more effective in the classroom environment.

Research applications: There are a number of areas where the current MOE authorities have expressed a desire to have a better information base in order to be able to take the appropriate corrective actions. To this end the MIS, by combining data available in the data bases with additional data collected in the field, can provide valuable diagnostic information addressing topics such as the following:

Exact proportion and distribution of overage children in the educational system, repeaters, and drop outs; factors that explain these phenomena; and recommendations for corrective actions to resolve these problems.

- Impact of new textbooks/curricula/teaching methodologies on student performance as demonstrated through such as indicators as: grades; achievement test ratings; repetition and dropout rates.
- Impact of the MOE's experimental schools on student achievement; recommendations of corrective actions to be taken in the experimental schools to make them more effective in their functions.
- Effectiveness of the existing normal schools; recommendations of corrective actions that need to be taken in order to improve the quality of teaching provided.

B. Social Soundness Analysis.

1. Identification of Project Participants and Potential Users of the Computer System During the Life of the Project.

Immediate participants in Phase II of the implementation of the Information Systems Activity include the Minister of Education, both Vice-Ministers, all of the Directors General and their immediate staff, the Coordinator of the Information Systems Department and all of the Information Systems Department staff. Intermediate participants include all supervisors and school directors in the country. Users of the system, during the life of the Project, include the Minister, the Vice-Ministers and Directors General, staff from the line offices, staff from other GOH offices such as the Superior Planning Council and the Ministry of Finance, school supervisors and directors as well as any other interested parties that come to the Information Department in search of assistance.

2. Participant and User Acceptance of the Computer System:

A key issue for the success of the Project and activities following on afterwards is the level of acceptance on the part of these participants and potential users of the system and their willingness to support the institutionalization of a MIS. If this acceptance is not in place, obtaining this acceptance/commitment looks doubtful, and the success of the Project and the institutionalization of the MIS would be put in serious jeopardy.

At this point in time one can state with nearly total assurance that the acceptance of the computer system is definitely there at high levels and that it is on its way toward being achieved at the level of the line offices. The Vice-Minister of Education for Technical Affairs, who has been and who will continue to be the primary motivating force behind this Project, is intensely interested in the Project and has continually put his full support behind it. The Minister and the Vice-Minister for Administrative Affairs, while not as involved up until this point, are very positively disposed toward the project and have shown by their recent actions their willingness to support the institutionalization of the system. The recently named Director General of Planning shows signs of being positively disposed toward the system although it is too early to assess exactly what kind of backstop support he will provide. The Director General of Secondary Education has exhibited a great deal of interest in the system, although contacts with this office have gone little beyond him and one or two of his immediate staff. The Director General of Primary Education, a participant in the Phase II project, has indicated that he is positively disposed toward the system although he does not yet have a full understanding of how it can serve him.

In recent months, very positive advances have been made at the staff level in the Information Systems Department in terms of commitment to/willingness to support the system. When the system was installed and data input activities began nearly a year ago productivity in the Statistics Unit was very low. At least a few Statistics Unit staff were openly critical of the computer system. This continued for a period of approximately nine months. During the past few months there has been a marked increase in productivity: the rhythm of input of data into the computer has increased dramatically and the individuals who were the strongest critics of the system are now among its staunchest defenders. A similar phenomenon is beginning to take place in the Research Unit.

At the level of the departmental and municipal supervisors, school directors, staff from other MOE line offices, and staff from other GOH offices that will be potential users of the system, such as the Superior Planning Council and the Ministry of Finance, contacts remain to be made and the labor de concientización has

yet to begin. This task, combined with the task of reinforcing the understanding of those who already are participants but who do not yet fully understand what the system can do for them (the newly named Director General of Planning, and the Director General of Primary Education) remain key undertakings to be carried out over the next eighteen months.

3. Project Benefits to Schools and Children:

Benefits to schools and children of the services being provided under this Project must be seen in the context of the eventual sub-goal of this Project which is to institutionalize a management information system in the MOE.

During the life of the Project immediate benefits will be seen in the time savings to school directors and teachers in filling out fewer forms, time that could more profitably be put into teaching and administration. Other immediate benefits will accrue to groups of students and their families as, for example, when the MIS is used to select candidates for scholarships to technical vocational highschools.

Over time the benefits of the MIS at the local level will show up in a variety of areas. To list a few:

- Better mechanisms for distributing texts to schools so that schools get the correct number of texts at the time at which they are needed.
- Better physical facilities planning at the MOE level, which in turn will make possible building new classrooms when they are needed.
- A more effective mechanism for identifying needs for upgrading the skills of teachers in diverse subject areas and providing in-service training courses on a timely basis.
- A mechanism for providing students, on a timely basis, with automated records that they can use to transfer from one school to another and to gain acceptance into the National University.
- A more accurate basis upon which to project MOE budgetary needs for individual line items which will in turn permit the MOE to make the necessary presentation to the Ministry of Finance to permit adequate allocation of operating expense funds.

C. Economic Analysis

Installing a computer based Management Information System, as has been amply illustrated in Sections I and II above, is a major undertaking which: (a) takes a number of years to complete, even in the best of circumstances; and (b) involves a significant monetary investment in both computer hardware and software as well as human resources (technical assistance and new MOE positions) especially at the beginning. To date approximately \$250,000 in A.I.D. grant funds have been invested in computer hardware and software and \$260,000 have been allocated for technical assistance. Under the Project, an additional \$31,000 in computer hardware and software and \$462,000 in technical assistance will be invested in this endeavor.

While it is important to recognize that the initial investment has been significant and that at least over the next few years there will be continued needs for investments in hardware, software, and technical resources, it is also important to examine the benefits over time that an accrue from such an investment. With the exception of the first benefit listed below, all are medium or long term in nature (e.g. the returns will not be fully seen during the life of this Phase II project) attaching a price tag is difficult. Nevertheless, they are significant, both in terms of the eventual savings to the MOE in operating expenses as well as in the accuracy and timeliness of data which, through the MIS, makes possible improving the quality of decisions made:

1. Immediate Reduction in Recurring Costs for Computer Rental:

As was indicated in Section II above, the MOE has, up until recently, been paying IBM \$101,000 per year to rent a computer. With the incorporation of the payroll system onto the WANG computer, this rental fee is eliminated and replaced instead with an annual maintenance fee of \$27,000, \$9,000 of which represents increased maintenance costs due to adding the payroll system and \$18,000 of which covers maintenance of the overall system being used at the MOE for other operations. The immediate cost saving to the MOE for computer operations - \$84,000 per year - is significant.

2. Overtime, a Significant Reduction in Records and Forms:

Reducing the number and complexity of data gathering instruments, and storing information records (students, teachers, staff, facilities, curriculum and finance) one time in machine readable format is one of the major sub-activities of this Project. Once accomplished it will result in the following benefits:

- . Reduced overall data gathering cost to the MOE (paper, supplies, level of effort in distributing, collecting and tabulating forms);
- . Reduced data gathering burden on teachers, school directors, municipal and departmental supervisors and MOE staff thus freeing them up for more important activities such as teaching and administration;
- . A reduction in the need for manual files, paper, and the allocation of physical space to store these files; and
- . Easier transfer of information from one MOE office to another.

3. Use of the Word Processing Feature on the Computer:

While there is no specific data available on this topic here in Honduras, studies in the U.S. have shown that, by converting from standard typewriters to word processing, as much as two-thirds of the secretarial/clerical time previously spent on document production (contracts, form letters, etc.) can be saved. One of the activities already underway under this Project is in the area of word processing.

4. More Effective Utilization, Production, and Quality of Work through Improved Training.

This is a key focus of the Project and not just in the area of computer systems (Annex E provides also for training in research methodology and statistics). While the potential economic benefits are very high it is impossible at this point in time to attribute an exact monetary cost saving to training.

5. Increase in Accuracy and Efficiency in the Handling of Student, Teacher, Staff, Facility, Curriculum and Finance Information:

This is the most important economic impact of the Project. However, like training, it is intangible and can only be measured by placing a value on the improved quality of decision making affecting the education system which results from these activities. By sharing data processing resources (people, hardware, and software) among the Directorates of the MOE and by providing more accurate data in a timely fashion, decisions should be taken more rapidly and more effectively.

IV. Implementation Plan:

A. Implementation Arrangements:

1. A.I.D. Liaison / M.O.E. Reporting Relationships:

a. Liaison with A.I.D.

The Vice-Minister of Education for Technical Affairs has been, and will continue under this Project, to be the official A.I.D. liaison. This is an arrangement that has worked out very well up until now and should work out well in the future. It is particularly beneficial for this Project as, once the Information Systems Department is moved within the organizational structure, almost certainly it will be placed as a staff office under the Vice-Minister of Education for Technical Affairs.

b. Internal MOE reporting relationships

Given the current location of the Information Systems Department within the MOE organizational structure, it has been general practice for the Coordinator of the Information Systems Department to report to her direct superior, the Director General of Planning & Educational Reform. The Coordinator has also maintained a parallel reporting relationship with the Vice-Minister for Technical Affairs. While this has at times been somewhat cumbersome, it has for the most part worked satisfactorily.

At the point at which a definite decision is taken on the location of the MIS Department (almost certain is that the Department will be moved to become a direct dependency of the Vice-Minister for Technical Affairs), internal MOE reporting relationships will change and the Coordinator will report directly to the Vice-Minister for Technical Affairs. From A.I.D.'s point of view this, for many reasons, is advantageous. Among others it will make the line of communication between A.I.D. and the Vice Minister on the one hand, and the Vice Minister and the Coordinator, on the other hand, much more efficient.

2. Procurement Plan:

The only commodity procurement planned under the Project is for supplementary hardware and software for the WANG VS computer. Procurement procedures will be initiated immediately upon Project approval, with an anticipated arrival date in Honduras for the equipment of November/December, 1983. All procurement will be carried out by A.I.D. through the PIO/C mechanism. Given that the hardware to be ordered will be for purposes of enhancing the existing WANG system a sole source procurement with WANG Laboratories will be necessary.

In the future (e.g. within the next nine to twelve months) the determination may be made, based on the results of a feasibility study, to purchase additional hardware. At this time the necessary justifications will be presented to AID/W and arrangements will be made, if funding amounts are minimal, to obtain additional loan funds from another Project component to finance this hardware.

With the exception of one host country technical services contract, USAID/Honduras will assume responsibility for all arrangements for technical assistance and training to be carried out under the Project (e.g. PIO/Ts, PIO/Ps).

3. Detailed Implementation Plan:

See Annex C.

B. Evaluation Plan:

A variety of mechanisms will be utilized to evaluate project progress:

1. Quarterly reports to A.I.D.: The MOE, as part of its periodic reporting arrangement with A.I.D., will include a section on Component 5 of the Project in its quarterly reports. This section will focus on implementation progress to date and highlight any problems that have arisen during the reporting period for which it has not been possible to arrive at an acceptable resolution.
2. Consultant reports: The General Advisor, the MIS advisor, and the Systems Analyst and Programmer on contract with A.I.D. will continue with the quarterly reporting format that they have been using since the computer system was initiated. These reports have been very useful, both as a means of maintaining a formal record of implementation progress and as a means of highlighting problems that are in need of resolution.
3. MOE records. Since the computer unit began the staff working in the unit have kept very careful records of programs developed, systems installed, and tasks carried out. One of the activities contemplated under the Project as part of the formal creation of the Information Systems Department is the creation of an administrative manual with guidelines for MOE personnel of how to use the system. Work is underway on this manual and certain elements, e.g. an initial form to be filled out by potential users, has already been prepared and is being used.
4. Periodic meetings between MOE and A.I.D. staff: A mechanism that proved very effective during Project development for both keeping key MOE staff informed of progress to date on implementation and for evaluating progress and determine actions necessary to improve certain aspects of implementation, was a series of day long meetings. This mechanism will be maintained during the Project and funds have been reserved in the financial plan to finance up to six day long meetings. These meetings will be held, at a minimum, every six months. If possible, they will be held quarterly.
5. Interim evaluation: In addition to the mechanisms identified above, arrangements will be made during May/June of next year to contract an outside consultant

to carry out an evaluation of progress to date. This evaluation will focus primarily on success in meeting the implementation targets identified in the logical framework matrix. The outcome of the evaluation will be used as the basis for a joint A.I.D./MOE decision regarding the advisability of entering into a Phase III project. The dates of May/June have been selected for this evaluation as this would provide a enough time for incorporating any recommendations that have implications for the MOE CY 1985 budget request to the Ministry of Finance (addition of new positions, increased computer maintenance, etc.) which is prepared in July.

C. Financial Analysis and Plan

A summary financial plan for the Project may be found in Annex H. The plan breaks Project expenditures out by calender year (1983, 1984) and by source of financing (A.I.D. grant; reprogrammed A.I.D. loan; GOH counterpart). The total Project budget amounts to \$872,000 of which \$650,000 is in the form of A.I.D. grant funds, \$31,000 in the form of reprogrammed A.I.D. loan funds, and \$191,000 in GOH counterpart. A total of \$176,000 in A.I.D. grant and \$31,000 in A.I.D. loan funds are expected to be expended during the remainder of CY 1983. A.I.D. grant expenditures for CY 1984 are projected at \$474,000. The GOH counterpart is divided into \$58,500 for CY 1983 and \$132,500 for CY 1984.

A key question for the future is how the MOE will finance increased personnel, computer maintenance, and eventually hardware and software costs during and beyond the life of the Project. The answer, in part, lies in finding a creative way of persuading the Ministry of Finance that the cost savings resulting from transferring the payroll operations from a rented IBM computer to the WANG computer be used to support the activities of the Information Systems Department in future years. As can be seen in the financial plan the MOE is currently covering maintenance costs and plans, and starting in CY 1984, is to begin covering salary expenses for newly created positions for the Information Systems Department. Computer supplies and related expenses (furniture; erecting internal partitions; purchase of a fire extinguisher; purchase of insurance for the computer) are already being covered out of the CY 1983 budget. Recurrent expenses (staff salaries, computer maintenance, supplies, insurance for the computer) will be carried over into the CY 1984 budget.

ANNEX A

AN OVERVIEW OF THE CONCEPT UNDERLYING A MANAGEMENT INFORMATION SYSTEM

The Management Information System (MIS) must provide for an organized process of identifying information needs, collecting and processing data, and providing information for decision making. The overall MIS plan should lead to an automated delivery system of information, flowing from the school level through the departments to the Ministry of Education and back.

The educational information hierarchy, Reference A, represents multiple levels in the delivery system, ranging in function from executive (setting policy and long-range plans) to management (allocating and overseeing resources to implement policies and plans), to operational (delivering resource to the target population). At each level, a variety of information needs exist, all sharing common characteristics. While the information provided by such a hierarchy is invaluable, one negative aspect exists. The bulk of the weight of the hierarchal structure rests on the lowest level. Therefore, the greatest burden is placed on the school level. Ways to reduce the burden include: (1) eliminating redundant data collection and (2) improving the tools, resources, delivery system and the management of the data.

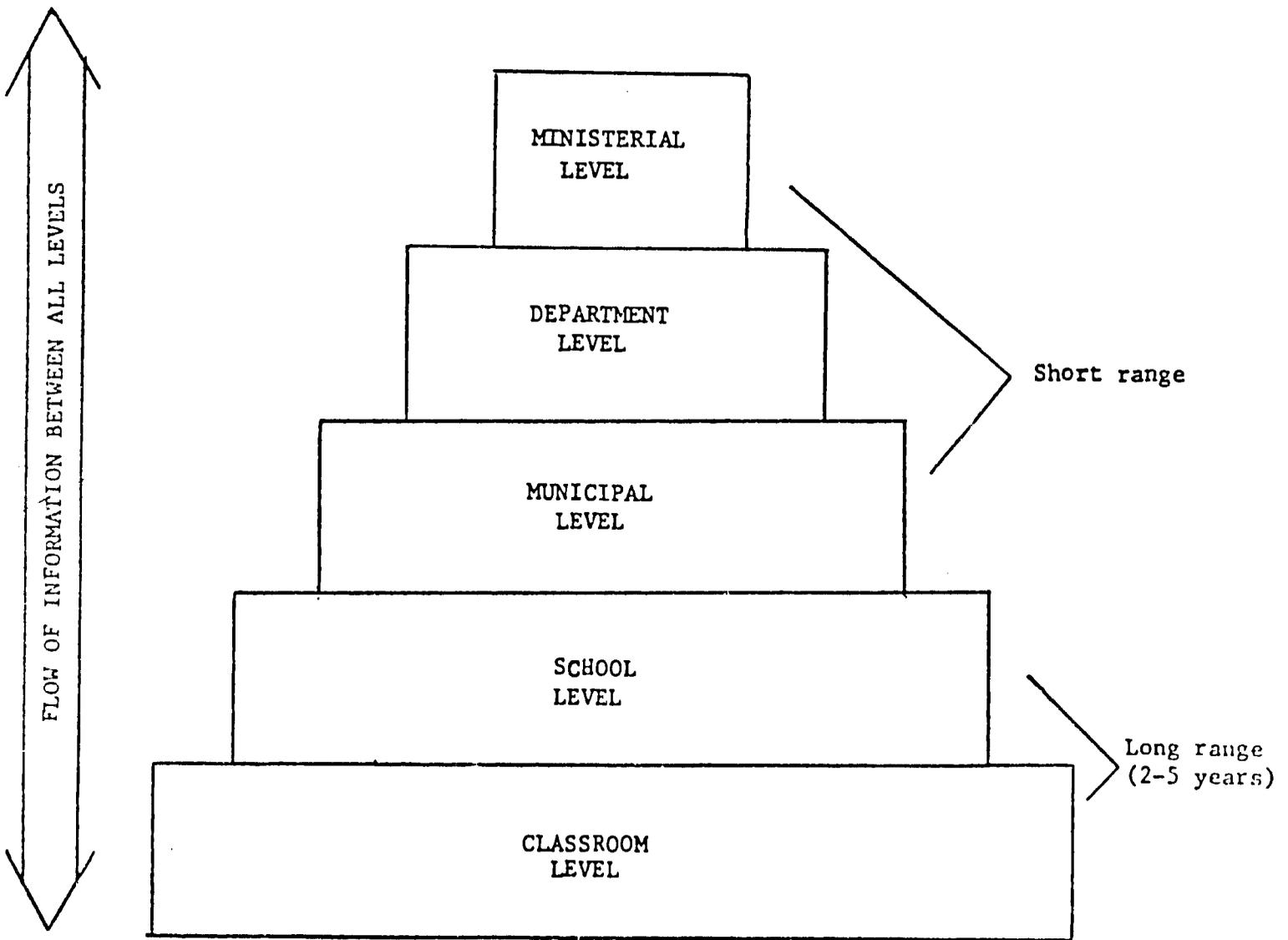
The MIS plan should provide for the flow and accumulation of data from and between each level of education served. Short range activities should focus on ministerial level aggregates flowing between the municipalities, departments and MOE, but long range activities need to provide for school level data flowing to the MOE and the access of data to all levels of management.

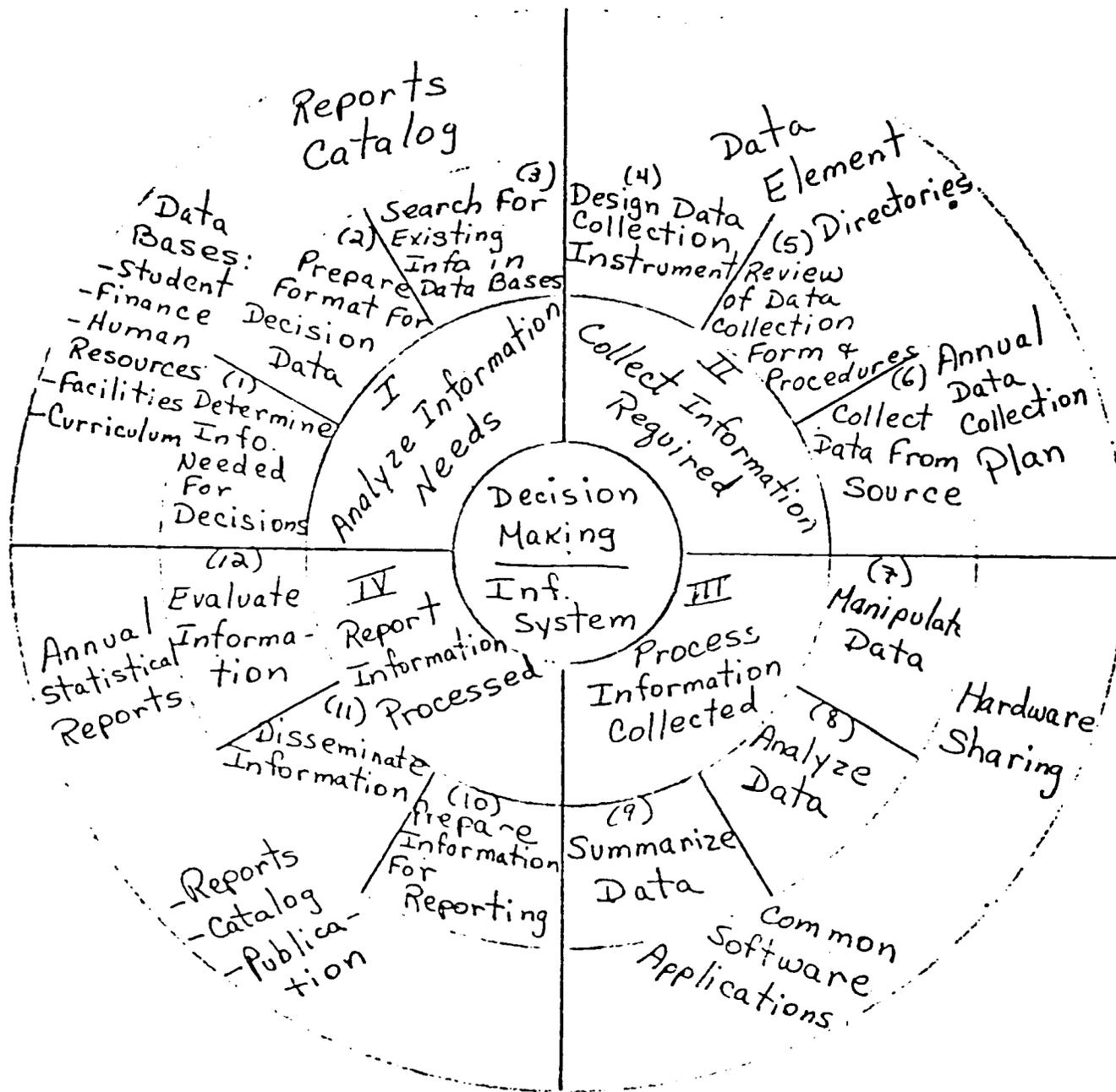
Reference B represents an MIS model on which an information system could be based. This model was developed in Florida during the time the State Department of Education was undertaking a conceptional design and implementation plan for an MIS. The model establishes the primary and secondary elements to any information system whether it be a manual system or an automated system. The primary elements include: (1) analysis of needs; (2) collection of data; (3) processing of data; and (4) reporting of the processed information. The three secondary elements in each primary element further aid in defining the actions that may be taken by the Ministry of Education in automating each module (subsystem) in its overall management information system design.

The secondary elements and potential outputs from each of the primary elements in the information system model include:

LEVELS OF EDUCATION SERVED
BY MANAGEMENT INFORMATION SYSTEM

The plan shall lead to an automated delivery system of educational information, flowing from the school level through the school, municipal and department levels to the Ministerial level and back. Information is provided at each level to better manage resources and activities.





I. ANALYZE INFORMATION NEEDS

A. Activities:

- Determine information needed for decisions
- Prepare format for finalized decision data
- Search for existing information in data bases

B. Products:

- Data bases (student, facility, educational statistics, finance, curriculum and human resource management).

II. COLLECT DATA REQUIRED

A. Activities:

- Design data collection instruments
- Review of data collection form and procedures
- Collect data from source

B. Products:

- Data element dictionaries
- Annual data collection plan

III. PROCESS DATA COLLECTED

A. Activities:

- Manipulate data (calculate, aggregate, etc.)
- Analyze data
- Summarize data

B. Products:

- Computer hardware sharing through interactive terminals
- Common application software sharing

IV. REPORT INFORMATION

A. Activities:

- Prepare information for reporting
- Disseminate information
- Evaluate information

B. Products:

MIS' statistical reports
MIS publications

The Management Information System may be looked upon as a repository or data bank designed to serve all levels of decision makers within the Ministry of Education. It is a system which evolves over time and becomes more useful to more and more decision makers as time and resources allow for the development, implementation and enhancement/maintenance of each of the subsystems. Reference C represents this concept and illustrates the subsystems (data banks) currently in place and those proposed during the next eighteen months and beyond.

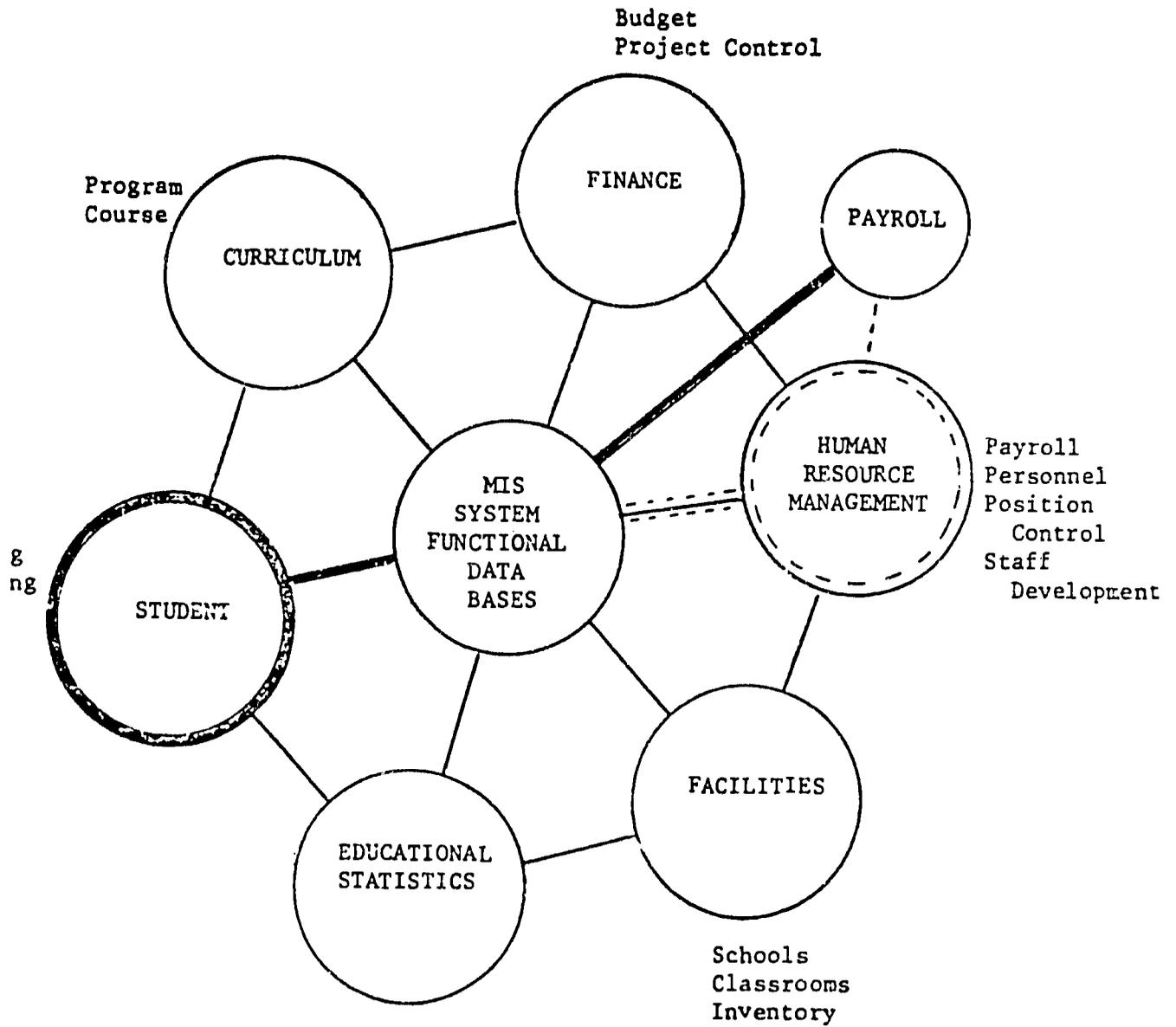
Reference C also represents the interrelationship of each of the information subsystems. The overall information system development plan must never lose sight that all data bases must be designed so that they can interface with each other and relate common and associated information. The overall "management" of this information must also assure continuity of information flow, timeliness and accuracy.

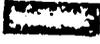
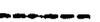
Again, referring to Reference C, the MIS is already providing useful information for the Ministry of Education level. This is evident in the educational statistics data base which is now providing output in the nature of annual statistical publications and special ad-hoc report outputs. This subsystem is also providing certain information for facilities and curriculum which will be very useful when the complete facilities and curriculum subsystems are developed and implemented. One must remember that each subsystem must be designed to interface with each of the other subsystems which make up the total management information system for educational decision making. One subsystem alone, does not create the total MIS!

Also, the payroll application is installed, more or less, as a "stand alone" subsystem. It was installed by moving the application from an IRM computer to the Wang computer, program by program. The payroll application, as presently written, consists of over one hundred and fifty (150) programs with little documentation. The payroll application evolved over a period of years with little overall design for efficiency of operation and effectiveness of use. The payroll application, therefore, needs to be enhanced - either redesigned or a payroll software package purchased from a vendor and installed to replace the existing application.

52

CONCEPT OF DATA BASE DESIGN
FOR MANAGEMENT INFORMATION SYSTEM



-  Installed
-  Proposed Development during next 18 months
-  Future Development

52

Regardless of the action to be taken on the payroll application, consideration should be given during the evaluation and feasibility study phase to have the payroll module tie in with the other modules of the Human Resource Subsystem. The payroll module is an integral part of the Human Resource Subsystem in that the module feeds certain data to the personnel and position control modules. This helps to control the redundancy of data collection activities and facilitates accurate and timely information transfer. Logically, since some action will likely be taken to replace the existing payroll application, the development of the remainder of the Human Resource Subsystem would be the next module to be developed in the MIS. Provided the personnel resources were in place and there was cooperation from all concerned, this module could be developed rather easily and field tested with administrative type personnel data.

If it proves not to be feasible to develop the Human Resource System as a complete module of the MIS during the next eighteen (18) months, then perhaps at least a feasibility study can be completed so that work can begin as soon as practical.

Each of the remaining subsystems (finance, curriculum, facilities and student) can be developed over the next several years after all MIS staff are fully trained and have acquired additional experience. During these next eighteen months, however, efforts should be made to perform feasibility studies on as many of the remaining subsystems as possible. These studies will provide management with information to be used in establishing development priorities and they will also be good training for the MIS Coordinator and systems analysts. Personnel must be first trained in the proper methods of performing feasibility studies^{1/} and the methodology of designing computer software applications which will interface to the total MIS concept.

^{1/}A guideline for performing feasibility studies has been developed and may be found in the A.I.D. files.

ANNEX B

TABLES, CHARTS, REPORTS AND STUDIES PRODUCED TO DATE BY THE INFORMATION SYSTEM

1. 270 tables produced for the 1981 Statistical Yearbook.
2. 50 tables produced for the study of over-age of the primary education system.
3. 51 tables of the initial enrollment, distribution of ages, number of schools, repeating students and number of teachers for 1982.
4. 28 tables produced for the Directorate General of Technical Education to evaluate the administration of John F. Kennedy High School.
5. 50 tables produced for the Secondary Education System: study of secondary school students with scholarships vs. those without scholarships. Also, technical support in the design, data processing, and support in the analysis of the results to determine differences in achievement.
6. Evaluation of the teaching staff of the John F. Kennedy High School (data processing, statistical calculations).
7. Design of mathematical operations and data processing techniques for the selection of recipients of scholarships for technical education.
8. Evaluation of the Social Sciences teaching staff at the Escuela Superior del Profesorado (design of statistical analysis, data entry, and data processing).
9. Study of the system for controlled evaluation and promotion of the Primary Educational system (study design, data collection, data entry and processing and analysis of results).
10. Study of the MOE's School Lunch Program (data processing).
11. Educational map: study design and data processing to create educational nucleus master file
12. Creation of statistical tables used by the Vice Minister for Technical Affairs
13. Creation of the school master file (all the educational levels).
14. Conversion of the Teacher Payroll System from an IBM computer to a WANG computer.

15. Study of over-age children enrolled in the primary educational system.
16. Tables and charts summarizing and comparing, over the last decade, trends in enrollments, budget, number of teachers and schools, drop-out and repetition.
17. Design of the training program for the Units of Statistics, Research and Data Processing.
18. Tables produced for the Ministry of Transportation providing information on school names and locations for use in making decisions on where to build access roads.
19. Tables produced for the Armed Forces providing information related to number of teachers, number of students, and administrative and technical staff of the MOE.

ANNEX C
TECHNICAL ADVISORY ROLES UNDER THE PROJECT

This Annex covers the workscopes for the three key sources of external T.A. the General Advisor, the MIS Advisor, and short-term T.A. The scope of work for each is described below.

1. General Advisor:

The General Advisor will provide a cooperative working relationship with the MIS Advisor and the two will have joint responsibility for seeing this Phase of the project to a successful completion. The person filling this position should possess an educational and practical experience background commensurate with the scope of assigned responsibilities (see below). It is desired that the General Advisor have a combination of training and experience relating to educational administration and management information systems development. In addition, the General Advisor must be capable of providing technical support in educational research, statistical analysis and user application development.

a. Responsibilities of the General Advisor include:

- (1) Coordinating short and long-range planning for management information services.
- (2) Assisting, in collaboration with the MIS Advisor, the MIS Coordinator, and the Vice Minister for Technical Affairs, in the overall conceptualization of the MIS.
- (3) Assisting in the review of position descriptions of members of the Information Systems Department and making recommendations for changes in these position descriptions.
- (4) Maintaining, especially in the early period while the MIS advisor is being oriented, the communication link between all levels of administration of the MOE and the Project.
- (5) Working cooperatively with the MIS advisor to assure that all planned activities are accomplished with efficiency and effectiveness within the Project time frame. This activity will require, especially during the first two months after the MIS advisor is hired, close support and orientation to the MIS Advisor.
- (6) Providing detailed guidance and coordination of research activities and statistical analysis and in the enhancement of the educational statistics data base. It is most important that this subsystem continue to improve

and provide the information for which it was designed. If the General Advisor could provide a greater level of support to this area, it will allow the MIS Advisor more time to devote to data processing activities.

- (7) Providing basic training in research methodology and statistics to the staff from the Research and Statistics Units.
- (8) Carrying out continual analysis of information flow and making recommendations to the MOE of actions needed to resolve bottlenecks in information flow.
- (9) Revising and enhancing data collection instruments presently being used in conjunction with the educational statistics data base and conducting workshops at all appropriate levels in the use of the revised forms. This will require a close working relationship with departmental and regional supervisors.
- (10) Exploring methods for fully utilizing data from existing data bases and conducting analysis and presenting the same in a form suitable for decision making.
- (11) Assisting the A.I.D. Project Manager to coordinate and conduct special assignments in conjunction with this phase of the Project.

b. Organizationally, the General Advisor reports to the A.I.D. Project Manager.

The position will be financed with Project grant funds through December 31, 1984.

2. MIS Advisor:

The need for an MIS advisor was identified in the interim evaluation. This person will be hired for a 15 month period and his/her responsibilities will be basically to provide a parallel working relationship with the coordinator of information systems and to be responsible for providing an interface between the A.I.D. Project Office and the Ministry of Education office for the purpose of seeing this phase of the project to a successful completion.

The person fulfilling this position must possess an educational and practical experience background commensurate with the scope of assigned responsibilities (see below). It is desired that the MIS specialist be formally trained in computer science or an associated

discipline and have a strong background in data processing administration, research, statistical analysis, computer system design (application software development for the educational environment), computer programming and operations management. The language skills of both Spanish and English is mandatory.

a. Responsibilities of the MIS Advisor include:

- (1) Providing a direct communication link between all levels of administration of the MOE and the USAID Project Manager for the purpose of effecting change and progress;
- (2) Working cooperatively with the Coordinator of Information Systems (MOE) to assure that all planned projects are accomplished with efficiency and effectiveness within the project time-frame. This activity will require overall direction and guidance to the Coordinator of Information Systems and will require, at times, giving detailed technical assistance in the development of management tools (schedules, data element directories, reports catalogs, data collection plans, policy and procedure manuals, information request procedures, staff and user training, etc.).
- (3) Assisting, in collaboration with the General Advisor, the MIS Coordinator and the Vice Minister of Education for Technical Affairs, in the overall conceptualization of the MIS.
- (4) Assisting in the review of position descriptions for members of the Information Systems Department and making recommendations of changes in these position descriptions.
- (5) Based on a detailed analysis of the background and educational experience of the individual selected to fill the position of MIS Coordinator, preparing a detailed training plan which assures that the individual - through on-the-job training, training experiences provided in country, and training experiences arranged outside of Honduras - acquires the skills he/she needs in order to effectively carry out the required job functions. The MIS Advisor shall be responsible for assuring that the resources are made available so that this training plan can be carried out. He/she shall play a key role in carrying out on-the-job training.

- (6) Providing technical assistance to all levels within the MIS structure in system application development, coordination and documentation. This includes developing standard procedures and assuring that these procedures are followed in:
 - Feasibility studies.
 - Systems design.
 - Programming.
 - System testing.
 - Evaluation.
 - Documentation.
 - (7) Providing guidance and assistance to the Coordinator of Information Systems in establishing and effectively using various user committees for the purpose of production scheduling, approving data collection plans, data review, etc.
 - (8) Providing periodic equipment utilization studies and developing, in conjunction with the MOE Information Systems Coordinator, methods for analyzing on-going utilization of the system. This includes usage of the CPU, terminals, and printers.
 - (9) Developing standards for data retention whether it be on magnetic tape or disk packs. Standards should involve retention off-line as well as on line and must provide guidelines for transferring data files offline when appropriate.
 - (7) Providing, in conjunction with the General Advisor, monthly progress reports which show status of each subsystem, problems encountered and recommended corrective action steps.
- b. Organizationally, the MIS Advisor will report to the USAID Project Manager with a "dotted line" responsibility to the General Advisor. The position will be financed with project funds through December 31, 1984. Due to the nature of this position and the close communication required with the MOE offices, especially the Coordinator of Information Systems, it is recommended that office space be designated within the Information System unit of the MOE.

3. Short term technical assistance

It is anticipated that short term technical assistance will be provided at periodic intervals during the life of the project. The person/firm selected should have access to the managerial and technical skills directly related to the formulation, development and implementation of management information systems for the educational environment.

Responsibilities of the person/firm include:

Serving as a communication link and a source for assisting with arrangements for U.S. training/observation tours, and for providing a screening service for technical consulting services which may be needed.

Providing technical assistance for specific activities as those activities are identified and needs are established. Activity areas include the following:

- Short term T.A./training in systems design as applied to education.
- Assistance in optimization in the use of hardware.
- Assistance in carrying out feasibility studies.
- Ongoing assistance with the educational statistics subsystem.

Providing an independent project review at specific intervals for evaluating progress made, identifying bottlenecks and making recommendations for resource effort and direction until the next review period.

The person/firm selected for this role will be financed with A.I.D. grant funds. A total of six to eight visits to Honduras, each for a period of two to three weeks will be carried out during the life of the Project. At the end of each visit, a progress report will be prepared for the purpose of indicating status of project and to provide direction until the next scheduled visit.

61

ANNEX D
COORDINATOR OF THE INFORMATION SYSTEM

The person in this position should have the educational background and experience necessary to perform the duties assigned. The Coordinator of the Information Systems Department should have formal training in computer science or an associated discipline. Preferably this individual should have a strong background in data processing administration, research, statistical analysis, as well as computer system design for education and operations management. It is recognized that this description is the "ideal" and may not be achieved. During the development years, however, every effort must be made to assure that the person in this position has, at a minimum, educational training and an experience background in data processing management, computer system (application) development and operations management.

a. Responsibilities of the Coordinator of the Management Information Systems include:

- (1) Providing the general management of the Information System Department and providing support to all units assigned to the department.
- (2) Working cooperatively with the General Advisor and the MIS Advisor to assure that all planned projects are accomplished efficiently and effectively within the project time frame. This will include:
 - (a) Being receptive to guidance in the formulation of policy and the development of procedure guides;
 - (b) Establishing user committees and data review/approval process for production scheduling, approval of data collection plan, data reviews, etc.; and
 - (c) Following the approved MIS development plan.
- (3) Providing overall technical direction and guidance to all units in the department in the maintenance of existing mechanized applications, enhancement of existing application and the development of new applications.
- (4) Working cooperatively with the General and MIS Advisor in the development of MIS Management tools (schedules, data collection plans, data element directories, reports catalog, procedure manuals, training tools, etc).
- (5) Providing technical assistance to all levels within the MIS structure in system application development and documentation.

- (a) Overall supervision to the Chief of Data Processing, research and statistical analysis.
 - (b) Must assure that continuity between each unit is maintained and that the MIS structure operates as a unit.
- (6) Providing a direct communication link between all levels of the MOE for the purpose of information flow, meeting information requirements and performing feasibility studies.

ANNEX E
TRAINING ACTIVITIES TO BE CARRIED OUT UNDER THE PROJECT

Key to the creation of the Information Systems Department and to the eventual institutionalization of the MIS is having a trained staff on board with: (a) an understanding of how the system operates and what benefit it can bring the MOE; (b) the capability to operate and maintain the system; and (c) the capability to produce information in a form that can be readily used to make administrative, technical, and policy decisions.

Training activities to date, under Phase I, have concentrated primarily on putting in place the capability to support the Data Processing Unit. Between the months of May, 1982 and February, 1983 a total of 28 MOE staff, drawn primarily from the different dependencies of the Information Systems Department, received basic training in programming techniques. Ten secretaries from the Directorate of Planning, the Office of the Minister and the Office of the Vice-Minister for Technical Affairs, and the Information Systems Department received an introductory course in word processing. In late February six individuals graduated from the course on basic programming in COBOL and three were incorporated into the Data Processing Unit where they are currently receiving on-the-job training.

A second output of the Phase I project was the production of a general training plan which includes guidelines for carrying out training in statistics and research methodology in addition to computer programming. Due to delays in review and approval of the training plan, as well as lack of clarity regarding staffing within the Statistics and Research Units, it was not considered convenient to initiate this training during the Project period.

Under the Phase II project staff who received basic training in programming techniques will further their training, both on-the-job and through attendance to short courses offered outside of the MOE by local computer firms; five additional secretarial staff will receive training in basic word processing techniques; and five will receive advanced training in word processing. In addition, staff from the Research and Statistics Units as well as the Analysis Unit, to be created in early 1984, will initiate training activities. Training/orientation will also be provided to users of the system (Minister, Vice-Minister, Directors General, staff from line offices, supervisors) to make them aware of the role that the Information System can play in facilitating their day to day activities.

A brief description of the training to be provided follows: 1/

1/ A detailed training plan was prepared during the first semester of 1982. A copy of this plan may be found in the HRD/E Project files.

63

A. Training for staff of the Information Systems Department:

Training will be carried out in the following four areas:

1. Training for the Coordinator of Information System

The person filling the position of Coordinator of Information Systems is expected to have a sufficient educational background and experience to manage the MIS and will therefore require little technical training. Nevertheless, on-the-job training will be required in the areas of

- a. Management Information System concept for the educational environment in Honduras.
- b. Organizational structure within the Ministry of Education.
- c. Review and complete understanding of existing subsystems/applications presently in operation.
- d. Internal procedures for the administrative process (personnel administration, employee evaluations, payroll process, supplies, budget development, etc.)

In addition to the above training requirements, it is expected that the individual in the position of Coordinator will also participate in the observation tour described in Section 4 below. An arrangement will also be made to have the person attend all pertinent local short courses and seminars developed by the A.I.D. financed advisors as well as other courses offered locally.

The MIS Advisor and General Advisor will be important links in assuring that training requirements are met for this person. Initially, the General Advisor will have a greater responsibility for the training and/or for the coordination of the necessary training.

2. Computer programming and word processing:

The 3 programmers who have recently been incorporated into the Data Processing Unit will continue to receive on-the-job training. This training will be provided by the newly named Chief of the Data Processing Unit in collaboration with the A.I.D. contracted Systems Analyst.

In addition to receiving on-the-job training, arrangements will be made to send these individuals as well as the Chief of the Data Processing Unit to advanced courses in computer programs and systems to be offered locally. The Chief of the Data Processing Unit, plus one other member of the Data Processing Unit (see Section 4 below) will also participate in an observation tour to the U.S. to be provided this fall plus a three month internship in the U.S. scheduled for the Spring of 1984 (see item 4 below).

In the area of word processing, training in elements of basic word processing for MOE secretarial staff, already initiated under the Phase I project, will continue. In addition, arrangements will be made to provide the newly named word processing supervisor with advanced training in word processing both within Honduras and in the U.S. 1/

3. Basic training in research and statistics:

Staff from the Research Unit have already received basic training in research methodology financed in large part under prior A.I.D. projects. Some of the members of the Statistics Unit have also received specialized training in Statistical methodology. However, with the exception of some of the training provided under A.I.D. Project 522-0108, none of this training has been oriented toward preparing these individuals to operate within the context of automated systems.

Under the Project staff from both units will receive basic training in descriptive statistics and applied research methodology. The training will be designed to complement the knowledge and skills that these individuals already possess by upgrading them to a basic skill level determined as essential for the basic functioning of the system. In the case of the Statistics Unit, for example, training will focus on providing members of the Unit with the capability to produce basic tables with frequencies and percentages. Trainees will also be provided with guidance in how to produce as well as interpret bar charts and graphs. In the case of the Research Unit, training will be provided in order to enhance and to deepen the knowledge they already

I/ Arrangements will be made, when courses are offered at A.I.D. for secretarial and professional staff, to make these courses also available to MOE staff. Also possible is that this individual will be sent to the U.S. in CY 1984 to a course offered by WANG Laboratories in Miami in Advanced Word Processing.

have in research (both at the office and at the field level), evaluation techniques, and software packages such as SPSS and STATPACK.

Training in word processing and computer programming/data processing will be continued throughout the life of the Project. Training in Research and Statistical methodology will be carried out in two stages. Each is described in brief below:

Stage 1: This training will take place during the Fall of 1983 with primary responsibility for providing the training to reside with the General Advisor, the Vice-Minister for Technical Affairs who has a strong background in research and evaluation methodology 1/, and selected members of the Research and Statistics Units. This training will be provided to all members of the Information Systems Department as well as some individuals from other MOE line offices. The training will serve two basic purposes: (1) Introduce the members of the Information Systems Department to the concept of what an Information System is and how it should function; (2) Provide orientation in the basics of research methodology and statistics; and (3) Serve as a mechanism for identifying individuals who have the potential to benefit from further training and weeding out those who do not appear to have this potential. Upon termination of the training, and prior to the completion of CY 1983, the MOE will review the status of all of the individuals who received the training and, if needed, reassign individuals to different functions.

1/ The Vice-Minister for Technical Affairs possesses an M.A. degree in Educational Research & Evaluation from the El Valle University in Guatemala. He has taught research methodology and statistics for a number of years at the Superior Teacher's Training College (Escuela Superior del Profesorado) and was responsible for directing all student theses. He has also received training in research methodology and statistics in the U.S.

Stage 2: This training will take place throughout CY 1984 and will basically follow the plan already developed for this purpose. Responsibility for the conduct of this training will reside with the General Advisor who will share responsibility for coursework with a competent professional to be contracted locally who has a strong background in research methodology, statistics, and data processing. As had been the case with the courses offered under Phase I in data processing, high standards will be applied to all coursework. Tests will be given periodically and if it appears that certain individuals are not able to keep up with the course demands, arrangements will be made to reassign them to other MOE functions.

The training described above will be financed in part out of A.I.D. grant funds and in part out of local currency generations. Prior to initiating the training scheduled for Stage 2, all participants will be asked by the MOE to sign a contract in which they commit themselves to work at the MOE for a period at least double to that of the training. With the expectation of some of the training in data processing, all training will be provided during work hours.

4. Training in the U.S. in Management Information Systems:

At the same time that the MIS specialist is carrying out the basic task of defining the overall role and functions of the MIS in the MOE, arrangements will be made under the Project to provide staff at the operational level with an introductory notion of what an MIS is, how it could and should operate, and what is involved in initiating a system and carrying it out to full operation. This activity will be carried out in two stages:

Stage 1 (fall of 1983): Arrangements will be made to send a group of six individuals 1/ to the U.S. for a two to three week observation tour to visit three or four MIS systems that currently operate in State Departments of Education 2/. The visit will serve two

1/ The Chief of the Data Processing Unit, the Research Unit, and the Statistics Unit; the System Coordinator; and the Vice-Ministers for Technical and Administrative Affairs. These individuals will be accompanied on the tour by the General Advisor and the MIS specialist.

2/ Individual states in the U.S. that have progressively developed successful Management Information Systems for Education include Florida, Georgia, Texas, Minnesota, Michigan, and Ohio.

purposes: (1) Acquaint MOE staff with these systems: their similarities and differences; what has been involved in developing these systems; the advantages and disadvantages of installing systems of this nature; ways in which these systems are used to take administrative and technical decisions; and (2) Provide the group with an opportunity to select one of these places as a site for a follow-on internship (see below).

Stage 2 (early CY 1984): The internship will take place starting in February or March of 1984 and last for a period of approximately three months. Seven MOE staff (the MIS Coordinator and two each from the Data Processing, Research, and Statistics Units) will participate. The internship will combine observation with hands-on experience in one of the MIS systems identified during the observation tour with complementary academic training to be offered in conjunction with a local university. All training will be provided in Spanish. Prior to initiating the training a representative from the MIS system will come to Honduras to become better acquainted with the characteristics of the MOE Information Systems Department and the qualifications of the individuals to be sent off for training.

All of the above training will be financed with A.I.D. grant funds.

B. Training for high level MOE officials as well as staff from other line offices:

Periodically, during the life of the Project, arrangements will be made to provide short courses/seminars on the MIS - its current functions and operations as well as projections for the future. Some will be tailored to high level MOE authorities (e.g. the Minister, the Vice-Ministers and Directors Generals); others to individuals working in line offices who will either directly or indirectly be participating in/benefiting from the Information System. Responsibility for providing these courses will reside with the General Advisor, the MIS specialist and the Vice-Minister for Technical Affairs.

Financing, as needed, for these courses/seminars will be provided with local currency generations.

ANNEX F

JUSTIFICATION FOR PURCHASE OF ADDITIONAL COMPUTER EQUIPMENT

1. Hardware and software for computer graphics to be used to enhance subsystem for educational statistics.

The educational statistics data base is the most important subsystem presently in operation. It is now producing statistical reports and reference documents which were, heretofor, not available to the MOE until perhaps three years after the fact. With the data base installed and operational, there is now a need for an additional tool for reporting the information derived through analysis of the data. This tool is in the form of a software package for producing computer graphics, one high resolution terminal for producing graphics, and one dot matrix printer suitable for producing bar charts and graphs. The acquisition of and use of this equipment should speed up the time that is now required to produce meaningful management decision making information and to produce more accurate information.

2. Hardware and software for subsidiary subsystem for keeping track of classroom construction/renovation activities under Project 522-0167.

A subsidiary subsystem is to be developed which will allow the retrieval of data on progress in school construction/renovation under Project 522-0167. Due to the fact that one component of this Project will be located in Siguatepeque, approximately 150 kilometers from Tegucigalpa, it is necessary to install a small microcomputer with a printer. This microcomputer can also serve as a terminal to the host computer when the educational facilities subsystem is developed and implemented. Through a system of microcomputers located at regional and departamental offices it will be possible to process data locally and transmit aggregate data on such items as facilities (schools, construction status, maintenance status) to the host system in Tegucigalpa.

3. Disk packs

In addition two 15-megabyte disk packs are needed for off-line storage of semi-large data files and one 75-megabyte disk pack is needed for system backup. Presently backup is made to magnetic tape which, due to the slow transfer rate, takes approximately 90 minutes each day of valuable processing time. With the 75 megabyte disk pack, the backup time should only take 15 minutes.

ANNEX G
DETAILED IMPLEMENTATION PLAN

	1 9 8 3				1 9 8 4													
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>Activity A: Conceptualization of the MIS</u>																		
<u>Finalization of MIS conceptual plan</u>						X												
<u>Organizational definition and reassignment of MIS Dept</u>						X												
<u>Orientation to MIS conceptual plan</u>																		
<u>Development of management tools & documents</u>																		

NOTE: Solid lines signify periods of time in which the activity or activities are continuous in nature; dotted lines refer to periods of sporadic or less regular activity.

ANNEX G
DETAILED IMPLEMENTATION PLAN

			1 9 8 3									1 9 8 4									
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC			

Activity B: Formal Establishment of the Information Systems Department

Designation of new
MIS coordinator

X

Legal establishment of
Department:

X

Creation of Permanent
Positions

X

Staff training:

- In- country:

. Data and word
processing

. Research metho-
dology & statis-
tics

. Courses/seminars
for users

ANNEX G
DETAILED IMPLEMENTATION PLAN

			1 9 8 3									1 9 8 4						
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

United States:

Observation tour
Internship

Ordering and installation of new equipment

Management improvement

Activity C: Support and Enhancement for Subsystem for Educational Statistics

Rationalization of data collection forms

Improved information flow

Timely production of data

Design & implementation of subsidiary subsystems

ANNEX H
COMPONENT 5: SUMMARY FINANCIAL PLAN

	GRANT		A. I. D. LOAN		GOH COUNTERPART	
	1983	1984	1983	1984	1983	1984
I. <u>A. I. D.</u>						
A. <u>TECHNICAL ASSISTANCE</u>						
General Advisor (18pm)	40	80				
MIS Specialist (15pm)	30	120				
Short Term T.A. (4pm)	10	30				
Senior Systems Analyst (17pm)	25	70				
Systems Analyst (17pm)	10	24				
Programmer I (5pm)	6					
Programmer II (17pm)	5	12				
<u>Subtotal</u>	<u>126</u>	<u>336</u>				
B. <u>TRAINING</u>						
<u>In-country</u>						
					2	4
<u>U.S.</u>						
Observation tour (6pm)	24					
Internship (21pm)		84				
<u>Subtotal</u>	<u>24</u>	<u>84</u>			<u>2</u>	<u>4</u>

ANNEX H
COMPONENT 5: SUMMARY FINANCIAL PLAN

	GRANT		A.I.D. LOAN		GOH COUNTERPART	
	1983	1984	1983	1984	1983	1984
C. COMPUTER EQUIPMENT						
Hardware & Software			27			
SPSS installation			2			
<u>Subtotal</u>			<u>29</u>			
D. <u>MOE LOCAL CURRENCY SUPPORT</u>						
Per diem and travel expenses for field trips for staff of Information System Department					28	16
Financing for local seminars/courses					2	4
Supplies (books, subscriptions)						5
<u>Subtotal</u>					<u>32</u>	<u>29</u>
E. <u>CONTINGENCIES</u>	26	54	2		3	3
<u>SUBTOTAL</u>					<u>35</u>	<u>32</u>

ANNEX H
COMPONENT 5: SUMMARY FINANCIAL PLAN

	GRANT		A.I.D. LOAN		GOH COUNTERPART	
	1983	1984	1983	1984	1983	1984
II. <u>G.O.H.</u>						
A. STAFF SALARIES						64
B. COMPUTER MAINTENANCE					15	27
C. INSURANCE					.5	1
D. SUPPLIES					3.5	8.5
E. FURNITURE					4.5	
<u>TOTAL</u>	<u>476</u>	<u>474</u>	<u>31</u>		<u>23.5</u>	<u>100.5</u>
				plus sub.	<u>35</u>	<u>32</u>
					<u>58.5</u>	<u>132.5</u>



SECRETARIA DE HACIENDA Y CREDITO PUBLICO
REPUBLICA DE HONDURAS

Tegucigalpa, D. C.,

julio 27, 1983

Pag. Nº.3=CP-1431...

ANNEX J

Page 2 of 2

Aprovechó la oportunidad para patentizarle las muestras de nuestra -
consideración y estima.



ARTURO CORLETO MOREIRA
Ministro

MAD/ream.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 80 to FY 84
Total U.S. Funding: \$15,650,000
Date Prepared: 7-26-83

Project Title: RURAL PRIMARY EDUCATION
Project Number: 522-0167

PAGE 1

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes:	Measures of Goal Achievement:		Assumptions for achieving goal targets:
<u>Socio-Economic Goal:</u>			
1. To increase the well being of the Honduran rural poor.	1. Increase in per capita income of rural population.	1. Evaluation of subsequent projects.	1. Increased access to improved educational services lead to a more productive life.
<u>Rural Primary School Subsector Goal</u>	Improvement in living conditions of rural population.	Income and Production analysis. Socio Economic Studies	Increase knowledge/skills result in better living habits/standards.
2. To increase rural primary school enrollment, and reduce the number of student years required to produce a sixth grade graduate in rural areas.	2. Rural primary school enrollment of children ages 7-13 increased from 60% to 90% by 1995. Number of pupil years required to produce a sixth grade graduate in rural areas reduced from the current 19 to 8 years.	2. Evaluation of subsequent projects. Attendance records. MOH survey of enrollment, student retention, literacy and academic test results.	2. That the MOE continues to increase the primary education budget by at least the rate achieved during the last five years. That the level of international donor support for Honduras' primary education system in the later years of the period is comparable to that committed for the early years of this decade. That double shifting is increased as Honduras becomes progressively more organized. That efforts to improve the quality of primary education continue. That the primary education system is fully nuclearized by the end of this decade. That fertility rates are reduced from 7.0 to 5.0 by the end of the decade.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 80 to FY 84
Total U.S. Funding: \$15,650,000
Date Prepared: 7-26-83

Project Title: RURAL PRIMARY EDUCATION
Project Number: 522-0167

PAGE 2

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Purpose:	Conditions that will indicate purpose has been achieved: End of project status.		Assumptions for achieving purpose:
<p>1. To expand and improve the physical infrastructure of the primary educational system in rural areas to enable the MOE to keep up with school age population growth while increasing the percentage of that population enrolled and to improve the quality of primary education received in rural schools thus reducing the primary school desertion rates and continue to support the development of a management information system in the MOE.</p>	<p>1. Enrollment of the rural primary school age population has increased from 310,000 in 1979 to 402,000 by 1985.</p> <p>2. Repeater and dropout rates decrease.</p> <p>3. Student evaluations show increase in performance.</p>	<p>1. Periodic and end-of-project evaluations.</p>	<p>1. That the present World Bank Project produces 813 new rural primary schools classrooms.</p> <p>That 200 new rural primary schools classrooms will be constructed annually without the assistance of A.I.D. or the World Bank.</p> <p>That 90% of the present stock of rural primary school classrooms will still be in use.</p> <p>That 10% of primary school students will be enrolled in second shifts.</p> <p>That the total number of primary school teachers in the system, including urban teachers and rural <u>empiricos</u> increases from 1979 level of 15,757 to 18,800 by 1985.</p> <p>That the professionalization program for <u>empiricos</u> is continued and expanded to keep-up with the expected increases in the number of <u>empiricos</u> in the system.</p>

**PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK**

Life of Project:
From FY 80 to FY 84
Total U.S. Funding: \$15,650,000
Date Prepared: 7-26-83

Project Title: RURAL PRIMARY EDUCATION
Project Number: 522-0167

PAGE 3

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs:	Magnitude of Outputs:		Assumptions for achieving outputs:
<p>Component 1: <u>School Construction and Renovation Component.</u></p> <p>Educational maps which relate the school age population to the number, condition and location of classrooms in target areas and allow rational allocation of resources in the construction/renovation of classrooms.</p> <p>New classrooms constructed and existing classrooms renovated in target areas.</p>	<p>1. Educational maps completed on schedule as indicated in PP implementation plans for five departments in target areas.</p> <p>2,100 new classrooms constructed and 1,000 classrooms renovated by end of project.</p>	<p>Educational maps, MOE reports, contract engineer reports, periodic evaluations.</p>	<p>Communities motivated to participate in self-help projects.</p> <p>Weather, labor strikes, cost increases do not interfere with construction.</p>
<p>Component 2: <u>Teacher Housing</u></p> <p>Increased teacher/student, teacher/community contact through teachers living in rural communities where they teach.</p> <p>600 Teacher houses constructed in rural school communities.</p>	<p>2. 900 teachers living in project houses constructed in rural communities by end of project.</p> <p>Reduced teacher turnover, desertion and absenteeism.</p> <p>Increase teacher-community contact.</p>	<p>MOE reports, periodic evaluations.</p>	<p>Communities motivated to participate in self-help projects.</p> <p>Teachers will live in rural communities where they teach if housing is available.</p> <p>Teachers will work additional hours if they live in rural communities where they teach.</p> <p>Weather, labor strikes, cost increases do not interfere with construction.</p>
<p>Component 3: <u>Maintenance System.</u></p> <p>Maintenance consciousness and capability instilled in school directors, teachers, students and parents in rural primary schools.</p>	<p>3. 90% of primary school directors and teachers will have received maintenance motivational training and have received maintenance manuals by the end of project.</p>	<p>MOE reports, periodic evaluations.</p>	<p>Willingness and capability of school directors, teachers, students and parents to participate in school maintenance.</p>

**PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK**

Life of Project:
From FY 80 to FY 84
Total U.S. Funding: \$15,650,000
Date Prepared: 7-26-83

Project Title: RURAL PRIMARY EDUCATION
Project Number: 522-OI67

PAGE 4

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs:	Magnitude of Outputs:		Assumptions for achieving outputs:
MOE regular school maintenance department capacity increased.	Minor maintenance being performed by teachers, students and community in 70% of rural primary schools by end of project. By the end of the first project year 18 MOE departmental maintenance agents and 18 assistants hired and provided with vehicle and tools and sufficient MOE funding to undertake major repairs. Major maintenance of target schools being performed in a timely manner in 90% of target schools by the end of project.	MOE reports, periodic evaluations. MOE reports, periodic evaluations.	Unit staffed in a timely manner with motivated and qualified persons.
<u>Component 4: Educational Supervision.</u>	ITTC and Pedagogical Section merged and providing in-service training to 90% of supervisors by the end of the project.	MOE reports, periodic evaluations.	GOH provides adequate budget for component.
In-service training to supervisors provided by In-Service Teacher Training Group (ITTC) and Pedagogical Section.	60% of teachers will have received training from the In-Service Teacher trainers by the end of the project.	MOE reports, periodic evaluations.	Supervisors motivated.
Increased supervision and training of teachers by supervisors.	90% of teachers will have received increased supervision by the end of the project.	MOE reports, periodic evaluations.	
Pedagogical/ITTC Section personnel trained.	22 Pedagogical/ITTC Section personnel trained by Mid-June 1981.	MOE reports, periodic evaluations.	
Comprehensive Training Plan	Training plan developed and approved by August 1981.	Submitted training plan	
Parent associations evaluation of teachers and rural schools.	Parent Association evaluations submissions twice a year for each project year.	MOE records.	Parents motivated to participate.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 80 to FY 84
Total U.S. Funding: \$15,650,000
Date Prepared: 7-26-83

Project Title: RURAL PRIMARY EDUCATION
Project Number: 522-0167

PAGE 5

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs:	Magnitude of Outputs:		Assumptions for achieving outputs:
Component 5: MIS System			
Role of MIS in context of overall MOE operations defined.	MIS analyzed and conceptual format developed. Administrative guidance for MIS implementation prepared. Requirements for long-term institutionalization of MIS established.	MOE Reports, periodic evaluations. MOE Records.	Information Systems Department created and staffed in a timely manner with motivated and qualified personnel. MOE continues to support and make efficient use of MIS System.
Management Information Systems Department formally established and functioning.	MIS Coordinator designated. Information Status Department legally established. New permanent positions created. Information System Department Staff trained in data and word processing methodology, statistics and MIS concepts. Management of Information System Department improved.		
Subsystem for educational statistics supported and enhanced.	Data for subsystem being used more efficiently. Bottlenecks in information flow reduced. Staff trained and producing in a timely fashion data for administrative and technical decisions. Subsidiary systems designed and implemented.		
Initiation of feasibility studies for priority subsystems.	Priority subsystems designated and initiated. Feasibility studies carried out.		

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 80 to FY 84
Total U.S. Funding: \$15,650,000
Date Prepared: 7-26-83

Project Title: RURAL PRIMARY EDUCATION
Project Number: 522-0167

PAGE 6

NARRATIVE SUMMARY			OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS				
Inputs:			Implementation Target (Type and Quantity)		Assumptions for achieving Inputs:				
U S A I D	G O V E R N M E N T	C O M M U N I T Y	Budget (US\$ in thousands)						
			USAID	GOV	COMMUNITY				
			X	X	X	Construction/ Renovation	10,450	800	2,856
				X		Maintenance		1,472	
			X	X		Training	622	15	
			X			Technical Assistance	851		
			X	X		Personnel	56	1,585	
			X	X		Equipment and Supplies	3,241	1,184	
			X	X		Operational Costs	296	2,527	
			X	X		Other Costs	122	82	
X	X		Contingency/ Inflation	12	1,235				
TOTAL			15,650	8,900	2,856				