IMPLEMENTATION PLANNING:

HIGHER EDUCATION IN CAMEROON

A PRODUCT OF TECHNICAL COOPERATION
-IN-
PUBLIC ADMINISTRATION EDUCATION

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IMPLEMENTATION PLANNING FOR THE HIGHER EDUCATION PROJECT: USAID - CAMEROON

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FOREWORD

The value of good consulting lies principally in the interaction between the consultant and the client. Consultancy is a mutual process of sharpening objectives, articulating and mapping ways of achieving them, and building a team commitment.

At the same time, the report of a management consultancy, if prepared with care, is more than a record of what happened or a plan for what is hoped will happen. A good consulting report can also be a training tool. It has illustrative value beyond the specific case. It combines conceptual, planning and operations management tools with application. The following report is an example.

The Government of the United Republic of Cameroon is building a new university center at Dschang with the assistance of the U.S. Agency for International Development. The applied agricultural sciences unit of that institution will be developed through collaboration between the Cameroonian government and a team from the University of Florida. This report represents a detailed work plan and simple management system for implementing that project.

The tools reflected are versatile and transferable. They are as diagnostic as they are prescriptive. The document can be used to demonstrate simple management tools and how they can be applied to development action.

E. Philip Morgan, Director
Technical Cooperation Project

ACKNOWLEDGEMENTS

The integrated system of tools for managing the implementation of programs and projects that is presented below has been developed largely by Practical Concepts Incorporated. The system was designed specifically to manage USAID project implementation in Kenya.

C O N T E N T S

INTRODUCTION

In February of 1979, USAID/Cameroon issued a Project Implementatic Document initiating the further development of the Higher Education Projec The Cameroon Government, in an effort to reorganize and expand its higher education system to better provide the manpower required by its developmer programs, requested assistance for the establishment of a unified Universi Center at Dschang. The UCD was envisioned as a center for practical, expe ential training in various agricultural professions.

The University of Florida provided a design delegation to prepare Project Paper which is still in process. One of the critical components c the PP which was considered to require further development was the project implementation plan. Given the complexity of activities and the numbers c long term and short term U.S. personnel required, the Project Manager and the Program Officer decided to request the assistancce of a management consultant for the purpose of developing the needed implementation tools.

Though a preliminary implementation plan had been prepared, discus sions with USAID personnel suggested that there were:

Under-estimates of the time and effort involved in key activities;

Mis-information with respect to the lead-time and difficulties involved in contracting procedures, degree program arrangements, commodity procurement, etc;

Difficulty with important LOGFRAME assumptions;

Inability or unwillingness on the part of the Cameroon Government to agree to certain necessary conditions precedent.

OBJECTIVES OF THE CONSULTANCY:

On January 30, 1981, I was contracted by NASPAA in collaboration with USAID/W to develop the implementation documents required for the Higher Education Project. After discussions with USAID staff, it was agreed that the following would be produced during the course of the two weeks:

1. P.E.R.T. Network for the entire project.
2. Performance Networks of key critical activities

and that these would be presented to a group of selected Cameroonian and U.S. personnel.

The actual output was greater. The following were produced:

A Revised Logical Framework
A Project Objective Tree
An Implementation Bar/Responsibility Chart
9 Sub-Routine Bar Charts
1 P.E.R.T. Network for the entire project
1 Critical Path Performance Network

and two presentations:

1 for the Deputy Director, USAID/Y
1 for selected Cameroonian and USAID personnel

INTRODUCTION TO THE TOOLS:

The Project Cycle:

All projects can be conceived as following a three-stage cycle: design,execution and evaluation, as shown in the figure below.

Projects begin at the design stage. During this stage the project objectives are established, feasibility studies may be undertaken, budget and resource requirements are estimated, project responsibilities are defined and coordinated, detailed work plans are developed, approval is obtained, etc. The design stage may last days or years.

Stage Two of the project cycle is Execution. Execution is the management of project inputs (activities and resources) required to produce project outputs (specific results).

Stage Three of the cycle is Evaluation. Evaluation is the process of examining progress made towards meeting objectives. It is intended to help managers improve the project. Evaluation may result in re-design followed by improved execution until project objectives are achieved.

The Project Management System:

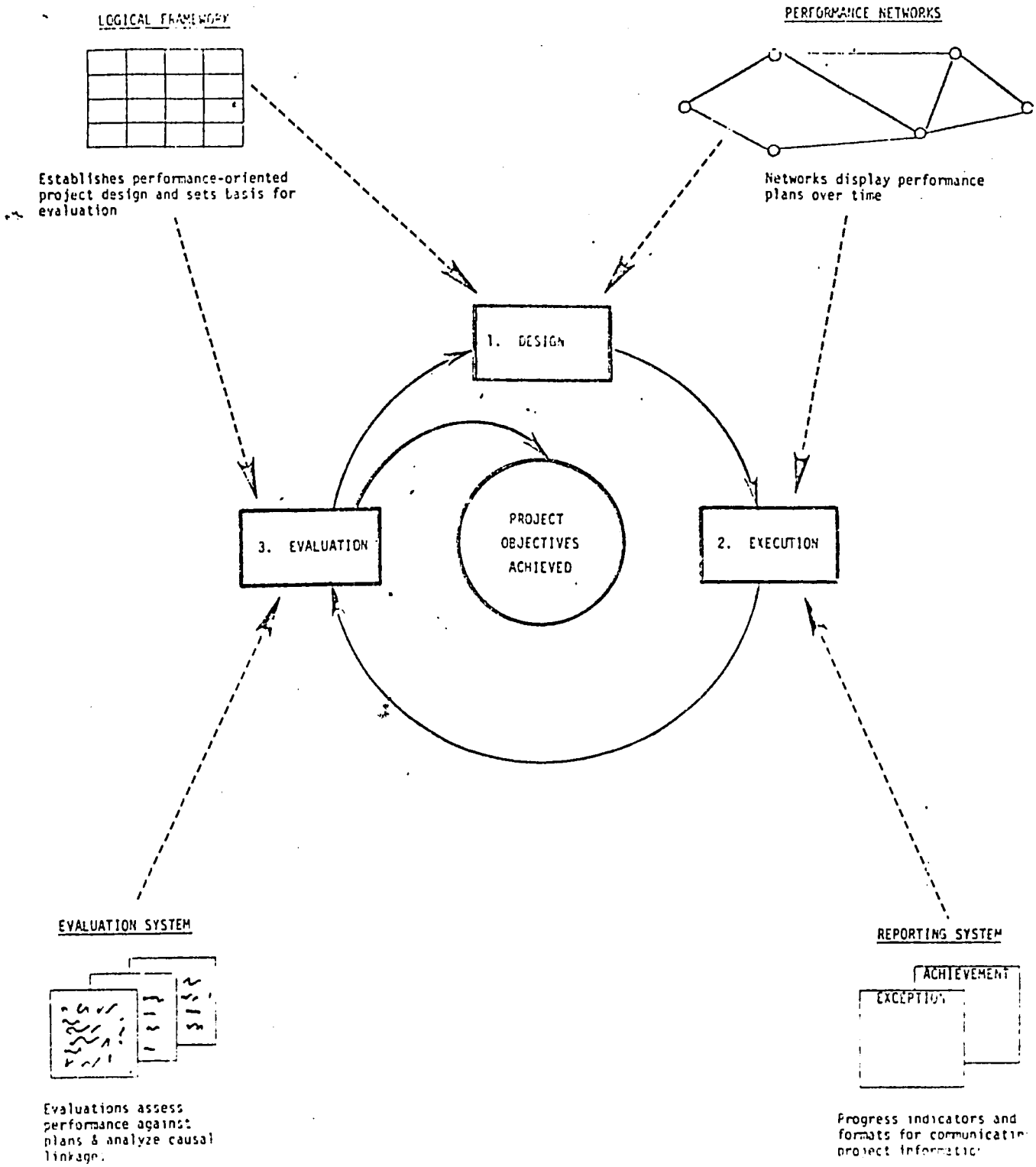
A Project Management System provides four basic management tools to support all stages of the project cycle. It is important to stress that these tools have been developed and refined based on the actual experience of project management teams in hundreds of project situations. Thus, they are not only conceptual approaches, they are valid techniques which work and bring value. The four basic management tools are:

- Logical Framework: an approach for specifying project objectives. The LogFrame clarifies the specific results as well as the hoped for results from a project. It identifies important assumptions and shows how we will measure achievement of project objectives.

- Performance Networks: Networks which show how the project will be implemented over time. Performance networks identify the sequence and relationship of project activities, and measure performance throughout the project.

- Reporting System: simple, effective, time-saving means of communicating status of key project events as these events occur, or as problems arise.

PMS PROVIDES MANAGEMENT TOOLS TO SUPPORT ALL STAGES OF THE PROJECT CYCLE



- Evaluation System: approaches for periodically assessing project achievement to date, refining the strategy, and improving the project.

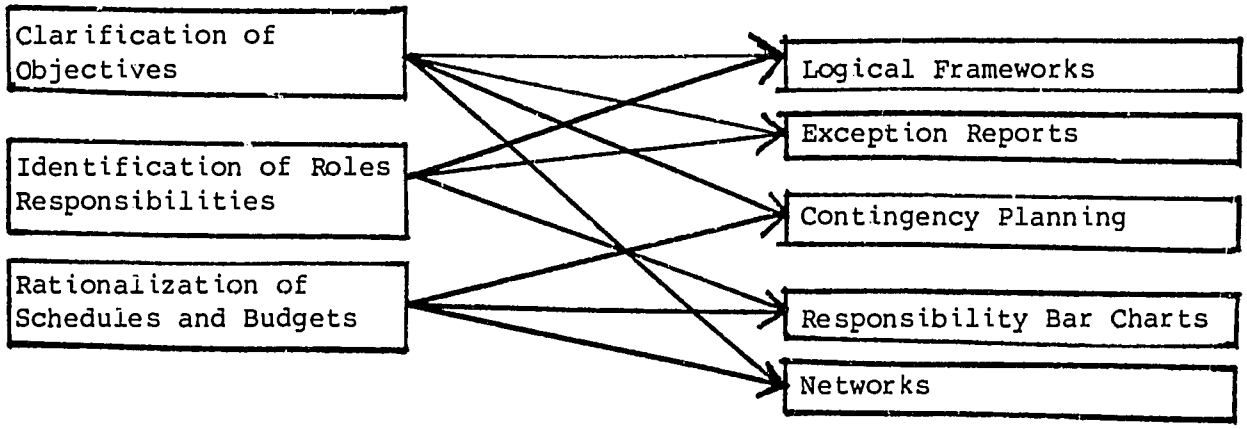
These tools and related supporting tools are described in sections that follow.

Implementation Concerns:

There are three basic problems which handicap project and program implementation:

1. lack of specificity or plausibility in basic objectives
2. lack of clarity among implementation personnel as to their roles and responsibilities and
3. inability to forecast and meet budgets and schedules.

The tools used in this consultancy and the tools further recommended respond to these problems according to the diagram below



THE LOGICAL FRAMEWORK:

The Logical Framework is a tool for displaying the hypothesized activities and events (both internal and external) which a project seeks to influence in order to achieve development objectives. It provides a clearly stated and precise description of the activities required for a project to be implemented successfully and on time. It displays the key objectives

and external conditions in terms of measurable performance (quantity, quality, and time). These criteria when transfered to performance networks and/or bar charts, become the key events used in monitoring project performance and taking corrective action.

The Log Frame is a design tool. It is team oriented in use. The activity of revising the Higher Education Project Log Frame helped clarify the Project Team's thinking about project goal, purpose, outputs and inputs. The team process identified assumptions that threatened project success and revised the verifiable indicators, quantifying the project's outputs and inputs. Below is the revised Project Logical Framework.

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS
Sector Goal: To increase agricultural productivity	Crop yield increased from X to Y or X%) by year _____.
Purpose: To establish an agricultural university which will produce the trained personnel (managers, researchers, planners) capable of implementing GURC's agricultural development program.	EOPS: • 850 trained managers,researchers and planners entering public agric. sector agencies Agricultural college in full operation
Project Outputs: 1.a. Reorganized administration at UCD and integrated degree programs b. Integrated degree programs	Magnitude of Outputs: 1.1. ENSA and ITA administration unified at Dschang. 1.2. Reduce class hours per faculty member by 30-50 %. 1.3. 3 interdepartment work shops and seminars held each year and creation of permanent faculty-administration working groups. 1.4. Common three year core curriculum for all students established.

2. Expanded academic program and new and revised curriculum that prepares students to meet job requirements of government's agricultural development program.

2.1. Increase of functioning departments from 4 to 7 to include:

(a) Agriculture and Basic Sciences
(b) Rural Education & Extension
(c) Rural Technology
(d) Rural Economy
(e) Animal Husbandry
(f) Plant Protection
(g) Soil Sciences

2.2. New & Revised Curriculum includes at a minimum:

(a) Agric and Basic Sciences:

Agricultural Geography and Geography Geology, Cellular Biology, General and Inorganic Chemistry, General and Agricultural Botany.

(b) Soil Science:

Soil Science, Soil Conservation, Restoration Soil Chemistry and Soil Analysis.

(c) Extension & Rural Education:

Extension methods and principles, Methods of group work and farming systems, practical training programs at Maroua, Ebolowa and Bambili.

In-service training programs for 100 teachers of agricultural colleges. Courses in Rural Education, Teaching Methodology and Curriculum Development.

(d) Rural Technology:

Applied Rural Technology Problems, Drawing Techniques, hydraulics Equipment, Repair, Electrical Equipment, etc.

(e) Agricultural Economy:

Cooperatives, Project Design and Analysis, Agricultural Marketing, Trade Contracts, Pricing, etc.

	(f) Animal Husbandry: Elements of Animal Pest Control, Animal Health, Feed Technology, Animal Traction, etc. (g) Plant Protection: Treatment and Handling of Tropical Products, Identification of Plant Diseases, General Plant Pathology, Fertility and Fertilization, etc. 2.3. Revised curriculum reduces existing courses by 50. 2.4. Revised curriculum is practical. 50% of student time spent in laboratory or on practical work. Indicators are: (a) 2 hours of laboratory work for 1 hour of classroom work. (b) Schedule work on student plots. (c) Development of Cameroonian case studies and their use in lectures. (d) "Stage" experience in the field. (e) Development/ utilization of 3 demonstration farms at Dschang, Bansoa, Djoutittsa. (f) Increase of independent library use: 10 hours per week per student.
3. Expanded and developed staff at UCD	3.1. 71 new faculty members added 3.2. 58 faculty members earn Masters degrees. 3 faculty members earn PHD's in U.S. training programs. 3.3. 115 receive in-service training in curriculum development and teaching methods: 1 month per faculty member per year.

4. Upgraded Research & Extension through increased amount of research and outreach done by each faculty member and improved ability of faculty to teach research methods.	4.1. Research or Extension time increased to 10 % of each faculty member's schedule. 4.2. In-service training in research methodo- for selected faculty. 4.3. Model Extension program provides services to 2500 farm families. 4.4. Practical research journal developed
5. Improved linkages with user-institutions to increase utilization of research research in planning and management of agricultural services to the small farmer.	5.1. Annual meeting to discuss course content by MOA, MOL, DGRST, and UCD. 5.2. Faculty exchange program with these organizations. 5.3. Annual Seminars on agric. issues (at UCD) for user institutions with total of 500 participants.
6. Constructed and equipped facilities at UCD:	6.1. Facilities total area (m^2)
Classrooms and lecture halls	3200
Library	2100
Laboratories	1200
Cafeteria	1400
Dormitories	5500
Campus farm	3000
Offices	1352

THE OBJECTIVE TREE:

Objective Trees graphically depict the objectives of a project in a series of heirarchical levels. Objective trees assume that cause/effect or means/ends linkages interrelate the project objectives.

The implementation use of an Objective Tree is that it:

1. provides the guiding rationale for the development of an implementation system
2. shows how project objectives are interrelated
3. demonstrates how the attainment of sub-objectives contributes to the accomplishment of higher order objectives
4. provides initial inputs to other implementation tools such as the Networks, performance Networks, Bar/ Responsibility Charts.

Based on the revised Log Frame, the Project Objective Tree on page 10 was developed.

BAR/RESPONSIBILITY CHARTS:

A bar/responsibility chart displays the schedule of key project activities and identifies the actor(s) responsible for their accomplishment. Each activity is represented by a bar that extends along a time scale. Activities are coded to identify offices or individuals with implementation responsibilities.

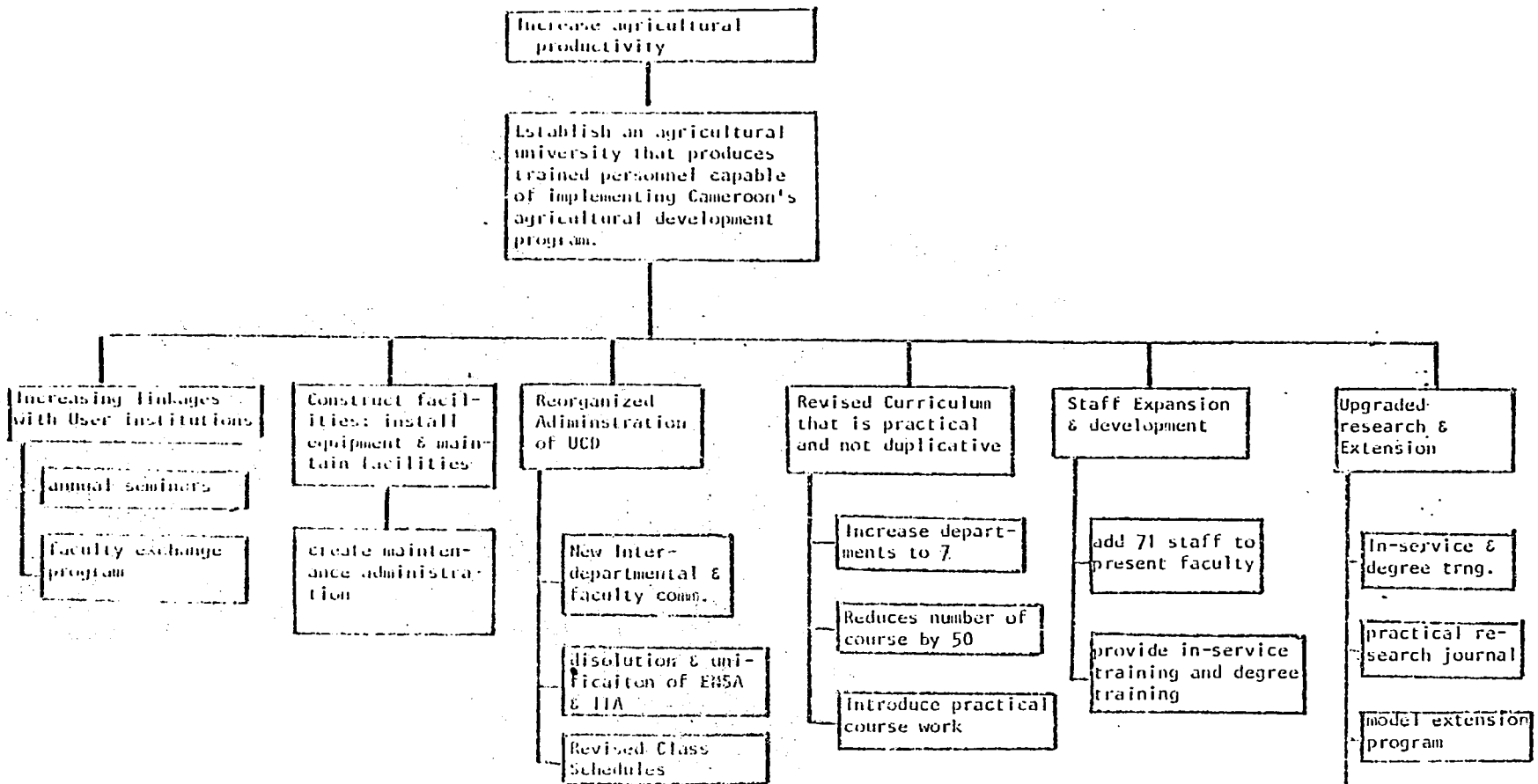
Officers may use the chart to schedule activities and record actual progress against planned performance. Included in the chart are those activities over which the officer has direct control (as contained in the Log Frame) as well as key external conditions which are beyond the officer's direct control, but are essential to successful project implementation.

The chart identifies the specific office or individual responsible for implementing the activities.

The bar chart may be used to communicate the project implementation schedule to others and to identify milestones.

The bar chart indicates when individual activities could be monitored. In this regard, the Bar/Responsibility Chart provides a foundation for constructing the Monitoring and Contingency planning systems to follow.

PROJECT OBJECTIVE TREE: HIGHER EDUCATION PROJECT



A sample portion of the Project Implementation Bar/Responsibility Chart is shown on page 12 of this report. The actual chart is too large for complete inclusion.

IMPLEMENTATION SUB-ROUTINES:

Sub-routines are modular descriptions of the steps and sequences involved in carrying our standard processes and procedures. They can be represented in several different formats depending on the nature of the activities, processes and procedures being described.

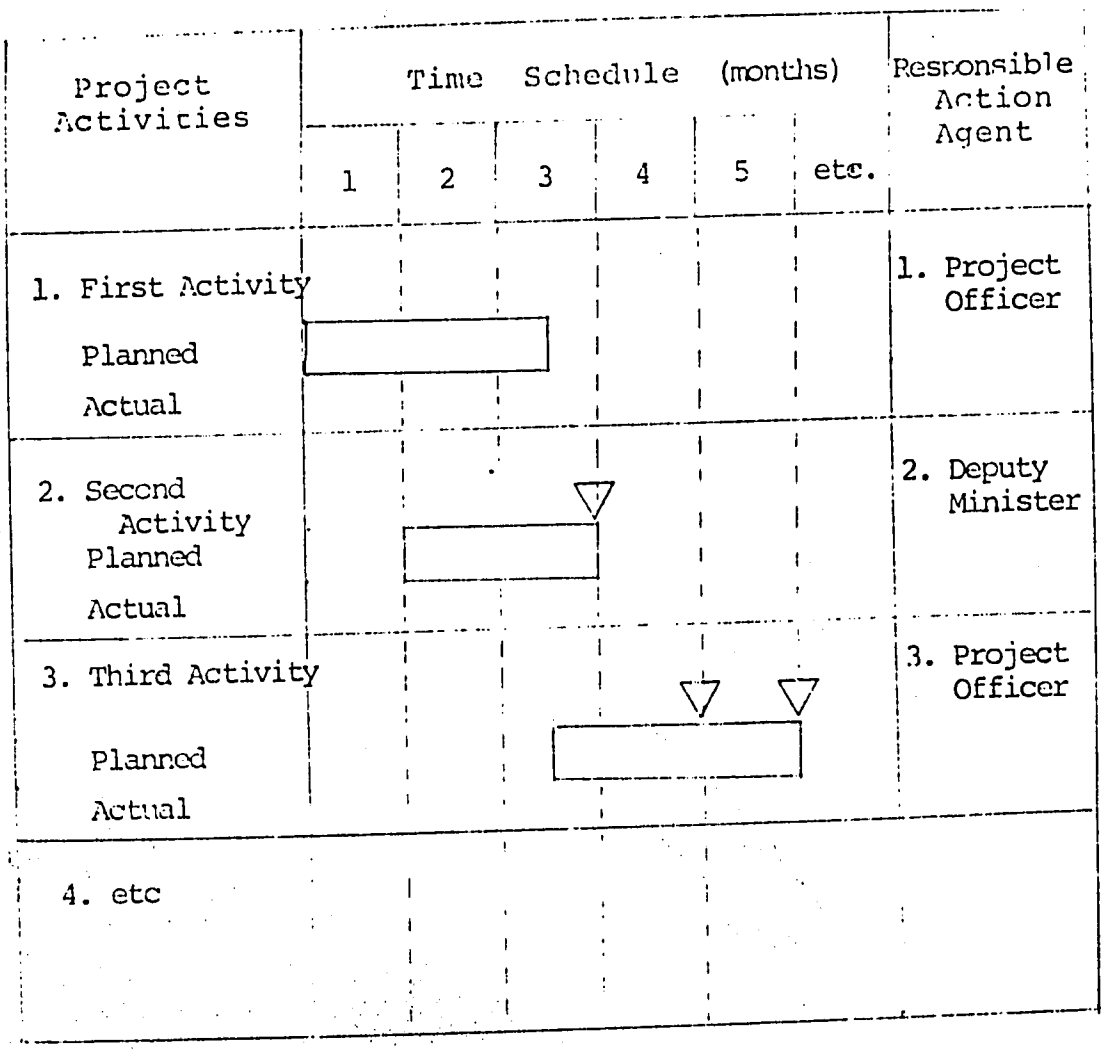
These tools should be used to ensure optimal sequencing and standardization of procedures. These include informal as well as formal procedures. They should be used as orientation for new staff members and reminders to more experienced staff members. They are useful as didactic tools in explaining AID processess and procedures to host country nationals.

If added to and amended over time, sub-routines can provide a systematic memory of the most effective and appropriate procedures for carrying our specific tasks. As such, they release project officers from the need to reinvent procedures in each case and thereby free their time for more substantive activities.

Nine sub-routines were identified and developed into bar charts. They are displayed on page 13. By isolating repetitive routines, Project Bar/Responsibility Charts and Networks can be simplified. When detailed knowledge of activities and sequences are required they can be referred to. Otherwise they appear as a single activity.

NETWORKING:

Networking is the graphic display of the sequence and the interdependence of activities and events in a development project. As a project planning tool, networking will increase confidence in the design of a project.



Legend:

= Activity Duration

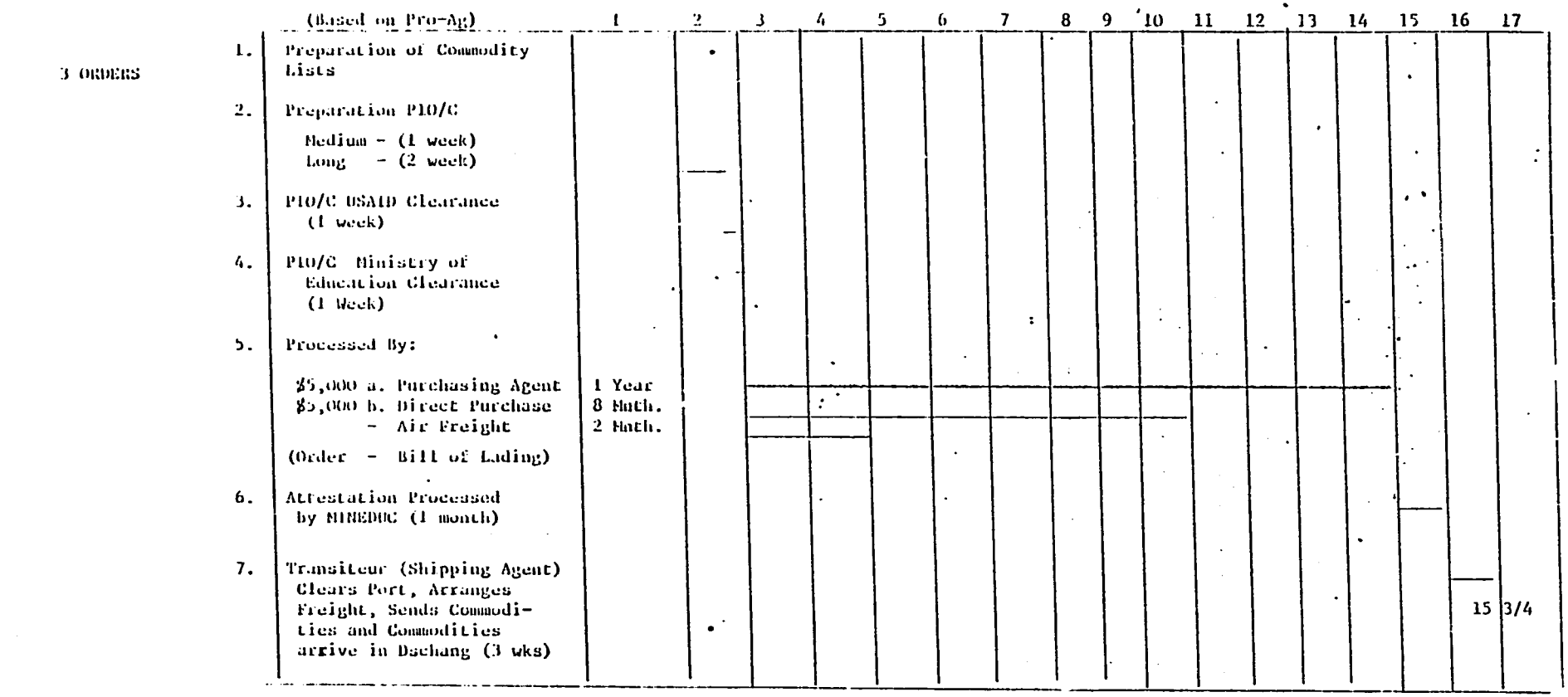
= USAID Monitoring and Influencing Action

PERT SUB-ROUTINES IDENTIFIED

1.	Hiring long term advisors	
	Internal to University of Florida	8¼ months
	External to University of Florida	12¼ months
	Locally Hired	1¼ months
2.	Short Term Partaicipant Training	8½ months
3.	Long Term Degree Training	
	Masters Degree training	3 1/3 years
	PHD Degree training	4 1/3 years
4.	Contracting A&E firms and Contracting Contractors	7 months
5.	Procurement/clearance/delivery on site	15 3/4 months
6.	Implementing new "Stage" program	5 months
7.	Implementing faculty in-service training	8 months
8.	Conducting an annual problem identification seminar for faculty and user-institutions	2½ months
9.	Conducting an annual teacher training conference	4½ months

SUB-ROUTTHE: PROCUREMENT/CLEARANCE/DELIVERY AT DSCHANG

3 ORDERS



BUILDING PHASES

Group No. 1

Dormatories
(Plans already prepared)

Group No. 2
005-6 Lecture Rooms
007-12 Library
022-26 Social Block
035-8 Rural Ed.
043-52 Basic Sciences
074-6 Grounds

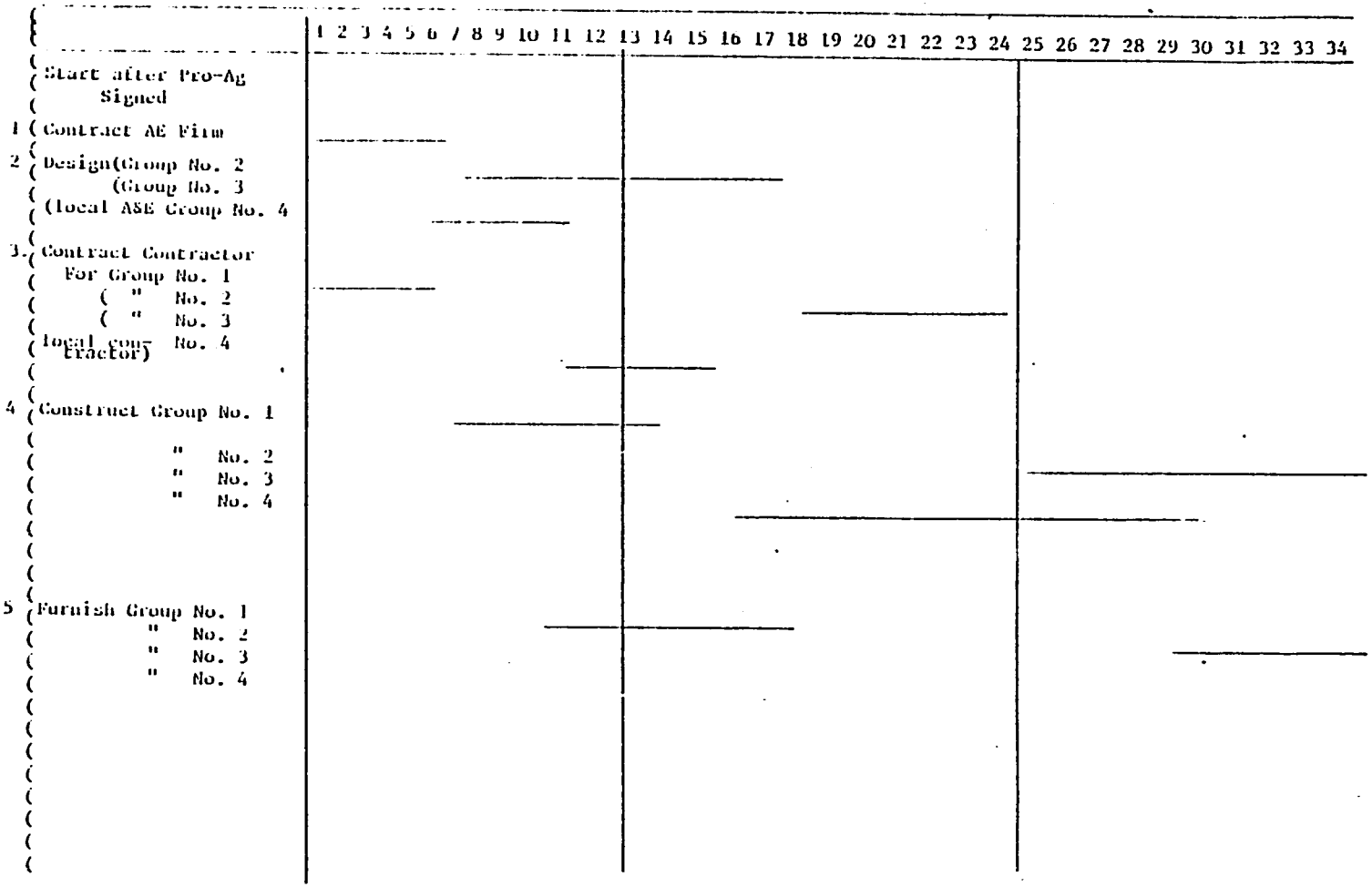
Group No. 3

062-4 Ag. Econ
Media
Sport Center

Completion of
other Buildings

Group No. 4

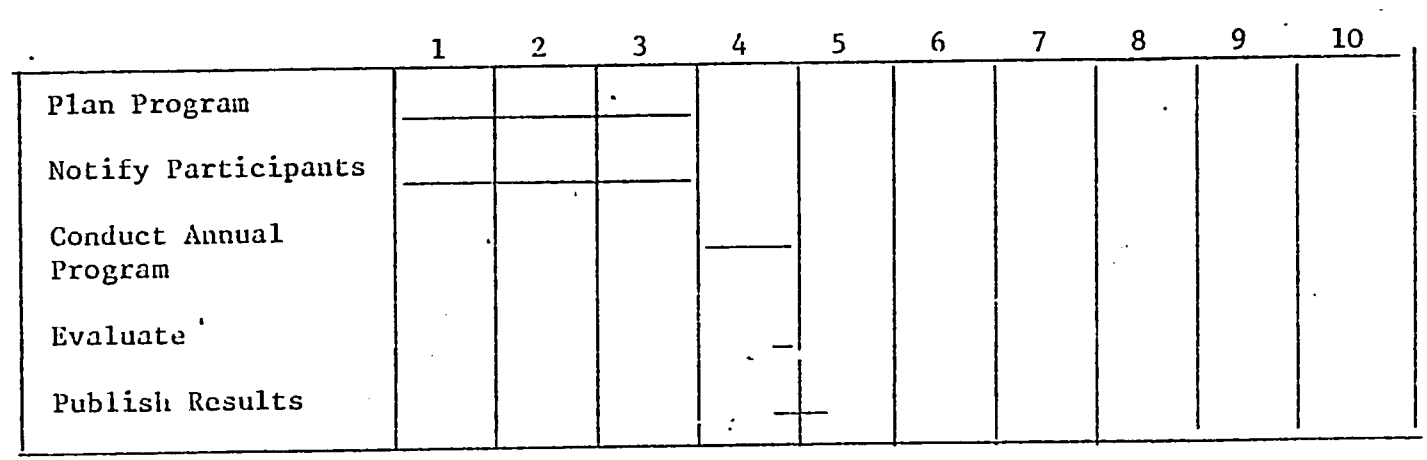
Bansoa Farm
Djoutitba Farm
Antenna 1
Antenn 2



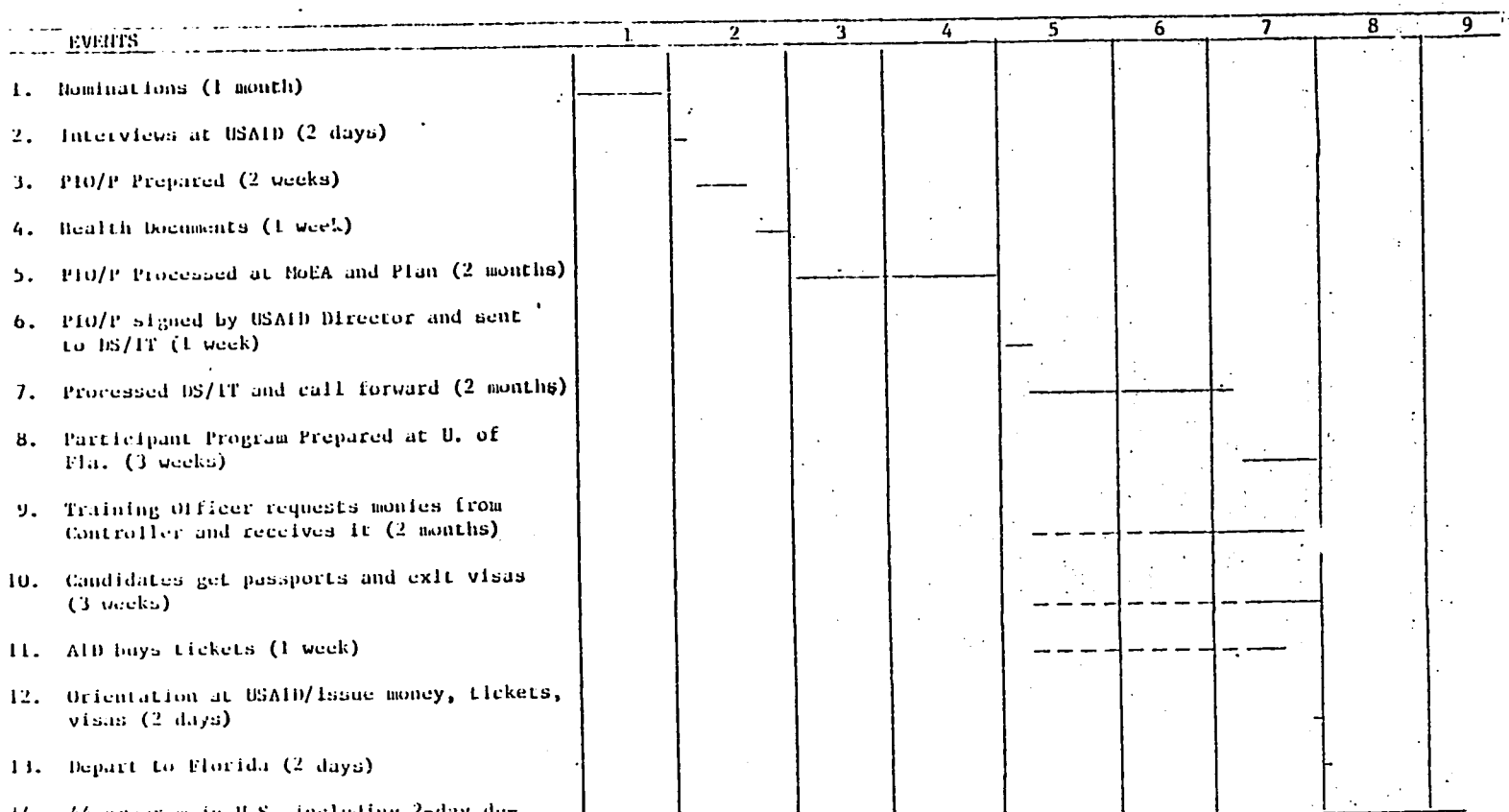
SUB-ROUTINE: RURAL EDUCATION's TEACHER TRAINING PROGRAMS - ANNUAL

(4 1/4 Months)

1st during 2nd long vac. (Techn. and faculty)

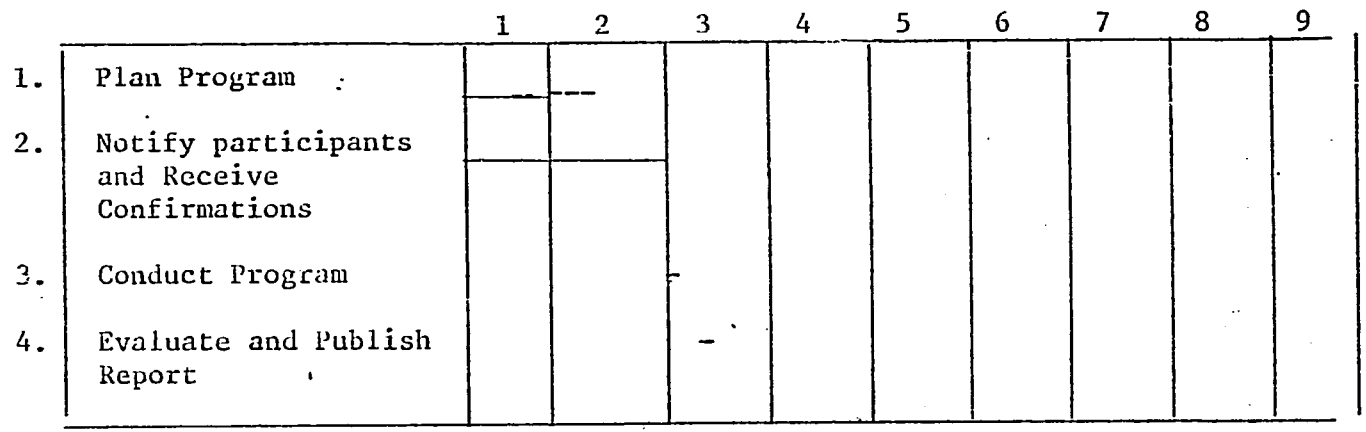


SUB ROUTINE: SHORT-TERM PARTICIPANT TRAINING - U.S.

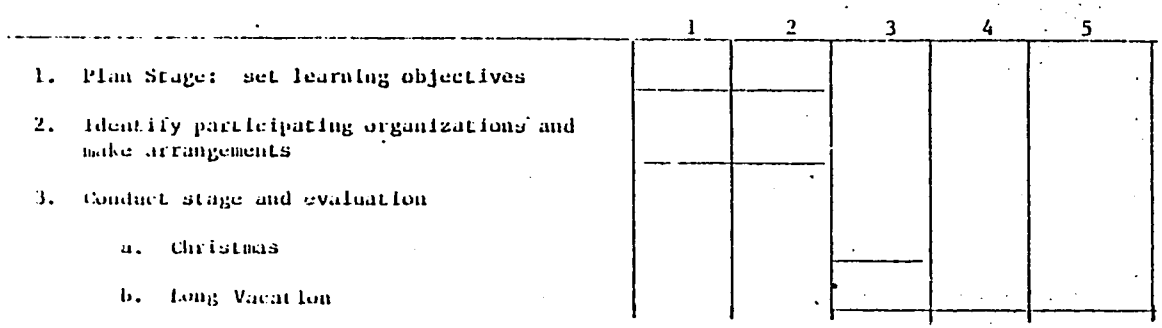


SUB-ROUTINE: ANNUAL PROBLEM IDENTIFICATION SEMINAR W/USER INSTITUTIONS

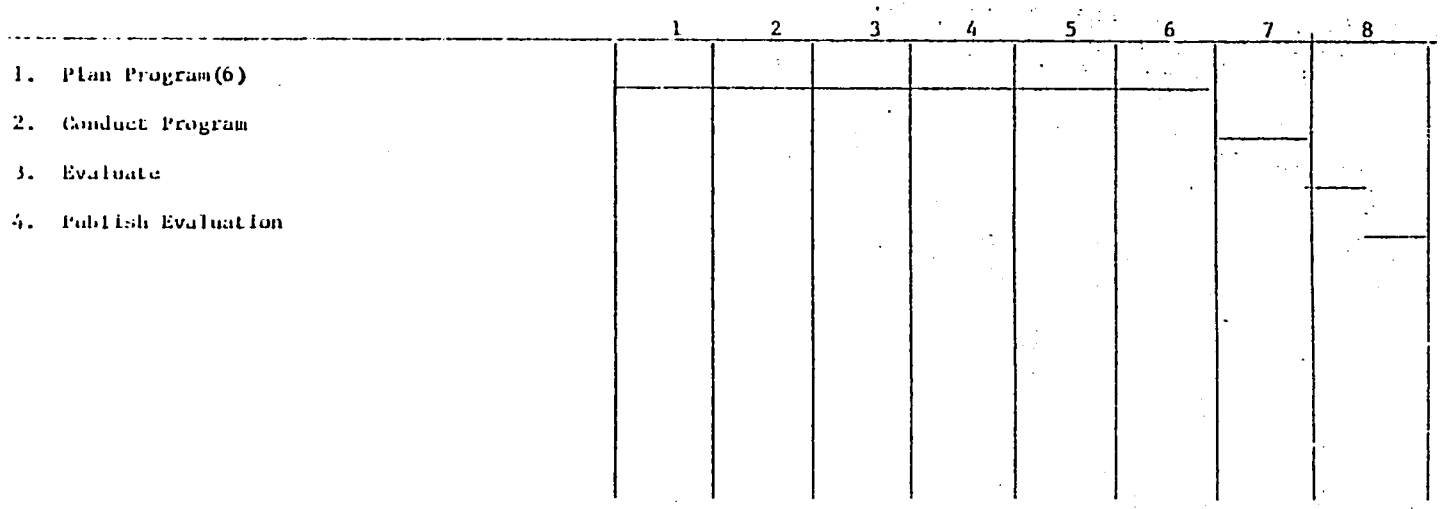
(2 1/2 Months)



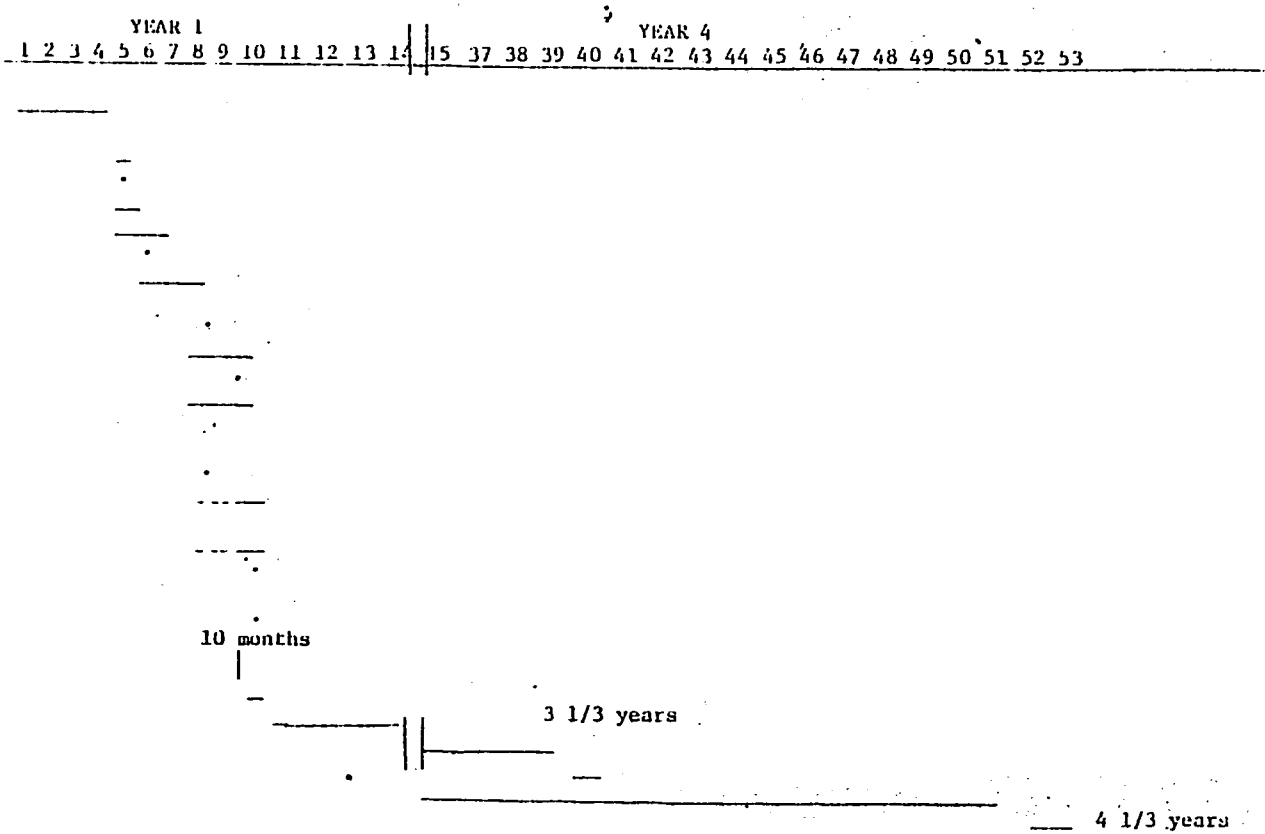
SUB ROUTINE: ANNUAL STAGE PROGRAM



SUB ROUTINE: FACULTY WORKSHOP - IN-SERVICE TRAINING



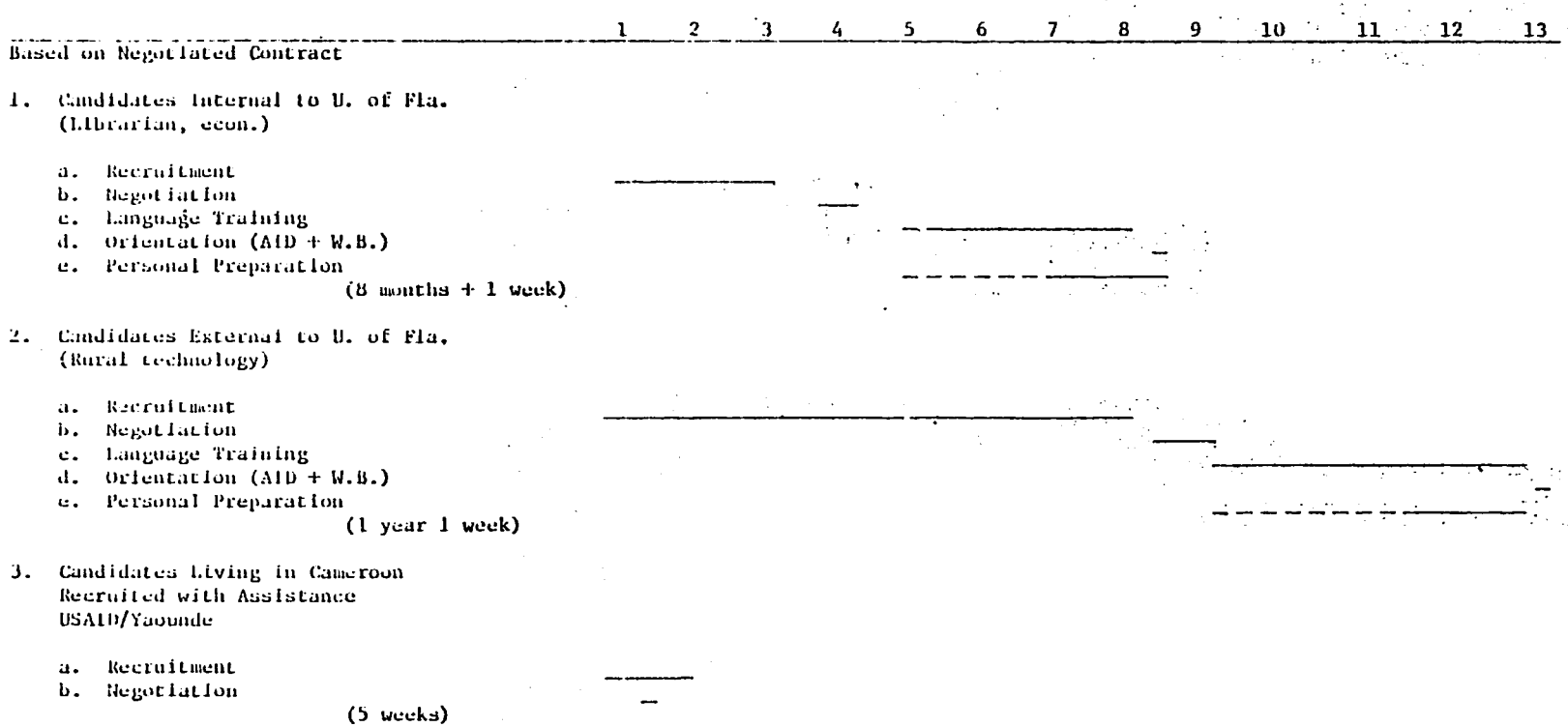
JOB ROUTINE: TRAINING/DEGREE - MASTERS and PhD FIRST WAVE



SUB ROUTINE: CONTRACTING (SAME FOR A+E CONSTRUCTION)

(Based on Signed ProAg)	1	2	3	4	5	6	7
1. Prepare Request for Proposal (2-3 weeks)	———						
2. Advertise locally (45 days) + in U.S. (add month)		———	———	———			
3. Review Proposals (1 month)				———			
4. Conduct negotiations (3 months)					———	———	———
5. Start work							(7 months)

SUB ROUTINE: HIRING LONG-TERM ADVISOR/TECHNICIANS



The Logical Framework states the resources and activities that are necessary for the desired outputs to be produced. Networking then illustrates how the resources and activities will be used to produce these outputs. This exercise will bring to light some of the constraints on project activities that were not previously evident.

Networking provides a bridge between project design and implementation. Once implementation is begun, the networks provide a basis for monitoring project progress. Networking also facilitates the reporting of progress to higher level management by making explicit the timing and nature of reports. Networks allow for a more proper management of resources by providing a format to show management where resources are needed, when they are needed, and how much is needed.

Finally, networks provide a basis for evaluating achievement. Quantity and quality targets of achievement at various critical points of time are clearly stated.

Critical Path:

> The elapsed time for each activity on a network--that is, the time required for the completion of each activity is shown. The longest time path of activity from the beginning to the completion of a project is called the Critical Path. This is the minimum time period required to complete the project.
>
> An increase in the time period necessary to complete any activity on the Critical Path will result in at least an equal increase in the time required to complete the project. Activities and events lying on the Critical Path are therefore generally monitored more closely than other activities and events.

Slack Time:

> The period by which activities can be delayed without affecting total project duration is called slack. When the slack time is known, project management can delay commencement of an activity for any period of time up to the full slack period of the activity in order to economize on the allocation of resources.

A Performance Network demonstrates the detailed linkages between outputs and inputs. They highlight the critical linkages where timely performance is required. On Performance Networks, the events of particular importance are highlighted by an "X" drawn inside the relevant circle. In many cases the Performance Network focuses on the Critical Path and 1 or 2 other critical sequences of activities.

The Project P.E.R.T. Network is provided as a separate display. In order to read the chart, refer to the list of P.E.R.T. activities and the list of P.E.R.T. events below. Computations have been completed to identify the Critical Path. In reading the chart, several conventions are used. The basic ones are:

Activity	_____
dummy Activity	----------
Event	0
Milestone event	⊗
Activity Duration	(2)
Latest Possible Starting Time	LS
Latest Possible Finishing Time	LF
Earliest Possible Starting Time	ES
Earliest Possible Finishing Time	EF

PROJECT P.E.R.T. NETWORK EVENTS

1. Project Start
2. Project Agreement Signed
3. Technicians Commodities ordered
4. lst 4 U.S. Technicians Arrived (or Recruited)
5. Contract negotiated with University of Florida
6. Administration specialist and research and extension specialist on BOARD
7. Complete first team building session for Project Team
8. Project Administrative Support staff hired
9. Project Office Established

10. Management training for Project staff completed
11. New faculty approved by MOE
12. Director of Extension and Research selected by MOE
13. Arrangements with a U.S. programming agency for short-term U.S. visits completed
14. New faculty take position
15. Position description for new faculty complete
16. Project management strategy completed
17. Team leader departs for language training
18. Team leader completes language training and returns
19. 8 U.S. Teaching assistants recruited - on site
20. 1st MA candidates depart
21. A and E firms contracted
22. Design work completed
23. Facilities Planner arrives for 1-month consultancy
24. Contractors contracted
25. Project Commodities ordered
26. Project Commodities arrive in Dschang
27. Construction Begins
28. Long-term and short-term consultants arrive
29. 2/3 all construction completed
30. Library staff hired
31. Librarian arrives in country
32. Library opens
33. Administrative reorganization plan completed
34. GURC decree establishes Unified UCD
35. ENSA move to Dschang complete
36. Curriculum Development Workshop complete
37. 1st Group MA's return

38. 3-year core track designed and approved

39.

40. Established Unified administration

41. Curriculum Revised

42. Library usage course given

43. Merged UCD opens

44. New stage program starts

45. All construction complete

46. Superintendent of experimental farm selected

47. Short term U.S. candidates begin returning

48. Research program begins

49. Farm management staff hired

50. U.S. maintenance consultant arrives

51. U.S. consultant and Cameroonian conduct maintenance training for staff

52. Ongoing maintenance starts

53. Experimental Farms in operation

54. Farm staff training complete

55. Work on student plots begins

56. On-going student farming begins

57. 1st problem Identification workshop held

58. 2nd problem Identification workshop held

59. 34d problem Identification workshop held

60. 1st Research Journal Published

61. Model Extension Program Starts

62. Workshops for Agricultural Agents in Area start

63. 1st model Extension Program Conference

64. 2nd model Extension Program Conference

65. 2nd group MA's Return

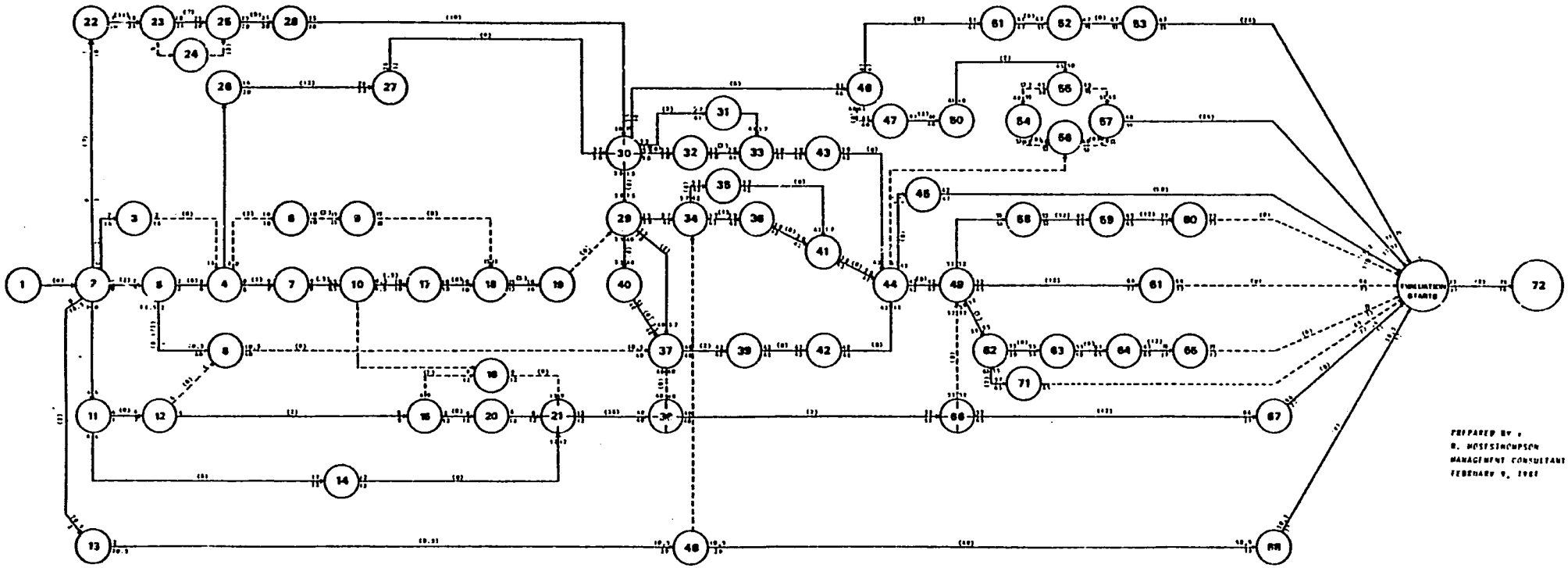
66. 3rd group MA's Return

67. Short-term U.S. visits completed

68. Final Evaluation

69. First Evaluation

PROJECT P.E.R.T. NETWORK: HIGHER EDUCATION PROJECT

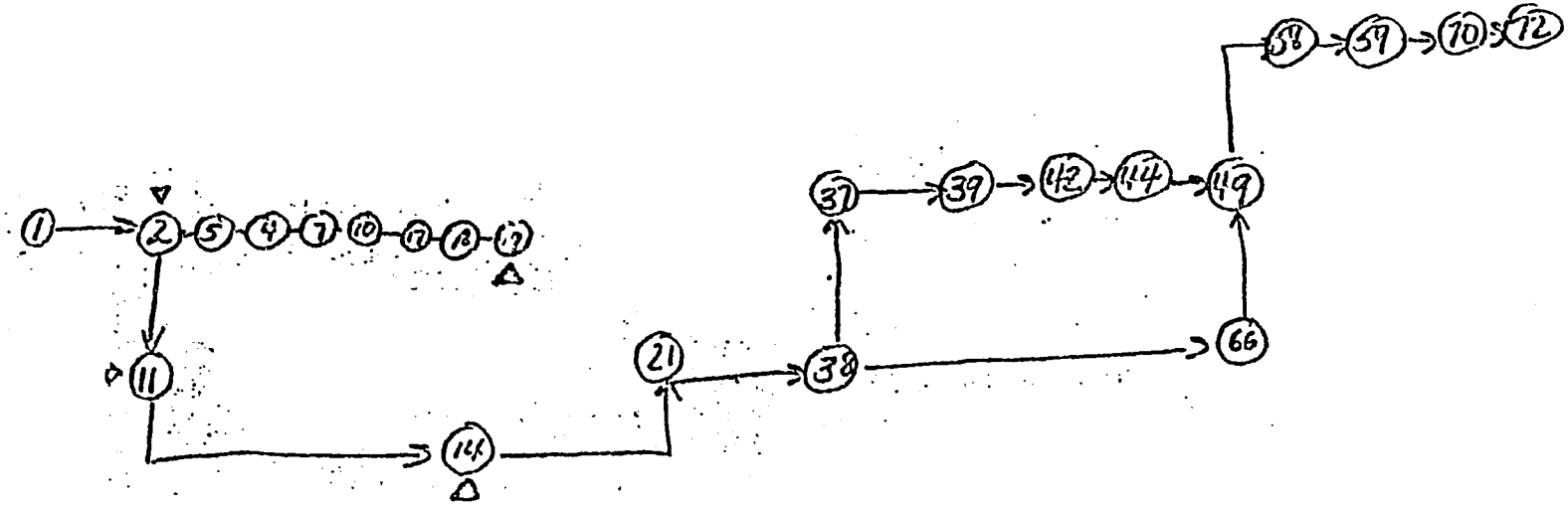


PROJECT P.E.R.T. NETWORK ACTIVITIES

		D	ES	EF	LS	LF	FLOAT	CP
1-2	Getting Pro-Ag Signed	0						
2-3	Ordering commodities for technician	2	0	2	12	14	12	
2-5	Negotiating contract with U.O.F.	2	0	2	0	2	0	
5-6	Recruiting the Admin Specialist and the Research and Extension Specialist	8.5	2	10.5	31.5	40	29.5	
5-4	Recruiting Team leader (...) Team Admin. Ass. Project Ass. Bibliographic researcher	6	2	8	2	8	0	X
4-7	Team Building of 4 U.S. Tech, Project Manager and Cameroonians	1	8	9	8	9	0	X
7-10	Management training for Project Team	.5	9	9.5	9	9.5	0	X
10-17	Develop Project Management strategy	.5	9.5	10	9.5	10	0	X
17-19	Team leader completing language training	3	13	16	13	16	0	X
4-8	Project administrative support staff hired	2	8	10	8	10	0	X
8-9	Project Office Established	3	10	13	10	13	0	X
2-11	New faculty approved by GURC	4	0	4	0	4	0	X
11-12-15	New faculty taking positions	2	4	6	7	9	3	
15-21	Preparing position descriptions for new staff	3	6	9	9	12	3	
11-14	Completing administrative arrangements for 1st group of MA students	8	4	12	4	12	0	X
21-38	1st group MA studying in U.S.	28	12	40	12	40	0	X
2-13	Make arrangements with U.S. programming agency for short-term observation tours	2	0	2	18.5	20.5	17.5	
13-48	First group short-term prepares for departure and completes tour	8.5	2	10.5	20.5	29	18.5	
4-26	Ordering Project Commodities	6	8	14	14	20	6	
26-27	Commodities en route-(processing time)	12	14	26	20	32	6	
2-22	Contracting AID forms	7	0	7	3	10	3	
22-23	Design the buildings	11	7	18	10	21	3	
23-25	Contracting a contractor	7	18	10	21	25	3	
28-30	Constructing 2/3's of the buildings	10	25	35	28	38	2	
29-30	Furnishing (installing commodities in 2/3	6	26	32	32	38	6	
30-46	Complete all construction - final 1/3	6	35	41	40	46	5	
30-31	Hiring library staff	2	35	37	39	41	4	
30-32-3	Recruiting U.S. librarian and preparing library for use	3	35	38	38	41	3	
33-43	Conducting program in use of library for faculty and students	1	38	39	41	42	3	
30-29	Long term advisors (rest of Group) and short term consultants arriving	0	35	35	39	39	4	
29-40	Starting in-service training	0	35	35	40	40	5	
29-37	Developing New Curriculum	2	35	37	38	40	3	

37-39	Developing 3-year core track	2	40	42	40	42	0	X
39-42	Finalizing revised curriculum	0	42	42	42	42	0	X
29-34	Development Administrative Reorganization Plan for New UCD	2	35	37	39	41	4	
48-34	Short-term U.S. visits, finishing to make administrators available for design of Administrative reorganization plan.	0	10.5	10.5	41	41	30.5	
34-36	ENSA moving to Dschang	1	37	38	41	42	4	
42-41-44	Merged UCD in operation,	0	42	42	42	42	0	X
44-45	New Stage program starting	0	42	42	47	47	5	
38-66	Second MA Group finishing second year of study	12	40	52	40	52	0	X
66-49	2nd MA group returning to participate in Research Program	0	52	52	52	52	0	
44-49	Research program beginning	0	42	42	42	42	0	X
45-70	New Stage program operating	30	42	72	47	77	5	
49-58	Conducting 1st Problem Identification Workshop	1	52	53	52	53	0	X
58-59	Conducting second Problem Identification workshop	12	53	65	53	65	0	X
59-60	Conducting 3rd Problem Identification workshop	12	65	77	65	77	0	X
60-70	Evaluating Prob. Ident. Workshops	0	77	77	77	77	0	X
49-61	Publishing first Research Journal	12	52	64	65	77	13	
61-70	Evaluating " " "	0	64	64	77	77	13	
49-62-63	Starting model extension program and running just workshops for agricultural agents	3	52	55	56	59	4	
63-64	Organizing and conducting 1st model Extension Program Conference	6	55	61	59	65	4	
64-65	Organizing and conducting 2nd model Extension Program Conference	12	61	73	65	77	4	
63-70	Evaluating Model Extension Program and conferences	0	73	77	73	77	0	X
48-68	Completing all short-term U.S. visits	48	10.5	58.5	29	77	18.5	
47-50	Super Intendent of Experimental Farms hiring Farm management staff	2	41	43	46	48	5	
50-53	Farm staff receive training	2	43	45	48	50	5	
53-54-56	Starting the farms and students Beginning Work on Student plots	3	45	48	50	53	5	
57-70	Farms in full operation	24	48	72	53	77	5	
46-51-52	U.S. maintenance and Cameroonian Maintenance Technicians conducting training program and designing maintenance plan	6	41	47	47	53	6	
53-70	Ongoing maintenance of UCD facilities	24	47	73	53	77	4	
62-71	Conducting first formal evaluation	2	55	57	63	65	8	
70-72	Conducting final evaluation	2	77	79	77	79	0	X

CRITICAL PATH: HIGHER EDUCATION PROJECT

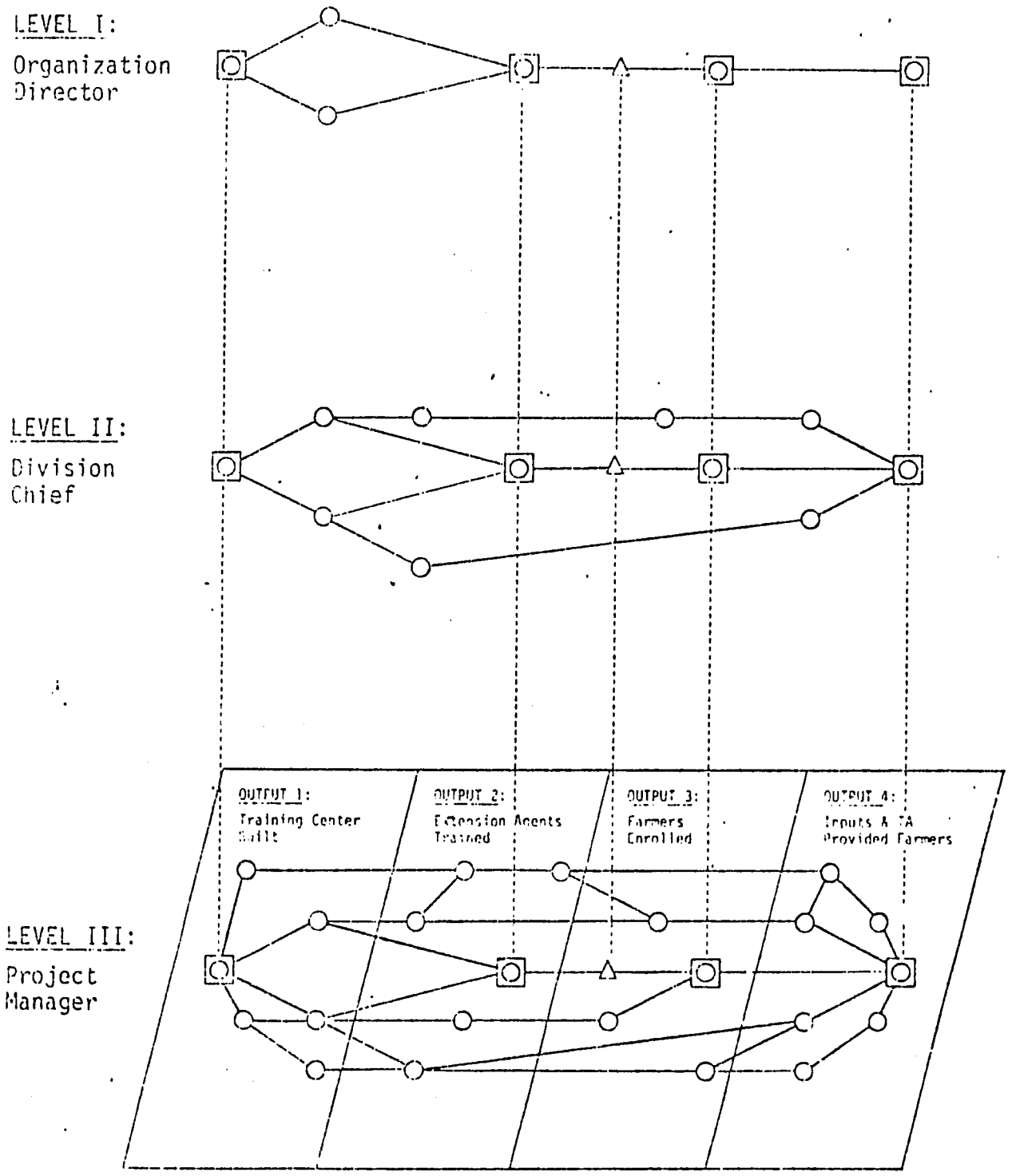


CRITICAL PATH

1 - 2	Getting Pro Ag signed
2 -11	New Faculty approved
11-14	Making arrangements for 1st MA group
21-38	1st group studying in U.S. and returning
38-66	2nd group leaving U.S. for studies
37-39	Developing core track
39-42	Revising curriculum
44-49	Research program beginning
66-49	2nd M.A. group returning
49-58	1st Problem Identification workshop
58-59	2nd Problem Identification workshop
59-60	3rd Problem Identification workshop
70-72	Begin Evaluation

1 - 2	Getting Pro Ag signed
2 - 5	Negotiating with University of Florida
5 - 4	Recruiting Team Leader
4 - 7	Team building U.S. Cameroonians
7 -10	Management training for project team
10-17	Developing project management strategy
17-19	Doing language training and returning
18-19	Project administrative support staff hired

HIGHER MANAGEMENT NETWORKS SUMMARIZE MORE DETAILED INFORMATION AT LOWER LEVELS



Recommended Additional Management Tools:

The technical papers preliminary to the Project Paper underscore the need for sound project monitoring and contingency planning. Tools to manage both areas are essential to effective implementation. Below are descriptions of suggested approaches to these two problems. Both tools were developed by the Agricultural Systems Support Project (IQC: Practical Concepts, Inc.) in 1979.

MONITORING AND REPORTING PLANS

Description:

Monitoring and reporting are two of the three pillars of a management information system -- the third being evaluation. Monitoring entails watching and influencing key activities and accomplishments; reporting entails telling someone about the project's achievements, problems or prospects; and evaluation entails explaining why things happened the way they did. In each case, information should be restricted to that required for decision-making and accountability.

A Monitoring and Reporting Plan is a systematic summary of the items to be actively watched and influenced and the items to be reported on. For each, it identifies: (a) the point in time at which the monitoring or reporting should take place; (b) the relevant indicators of progress or achievement; (c) the expected levels of accomplishment for those indicators at that point in time; (d) the best source of data to verify the indicators; and (e) the person to whom the report goes. (See Figure 11 F-1.)

Implementation Uses:

1. The Monitoring Plan is very useful in integrating and streamlining project implementation information. It clearly defines what we need to know, when we need to know it, how we are to find it, and who is responsible for doing so.

2. By focusing attention on the information that is really needed, the Plan reduces information over-load and helps to ensure that the right information gets to the right people at the right time.

3. The Plan, once accepted, becomes an agreement between people at various levels of the organization about the nature, frequency and substance of information flows.

It permits much conventional reporting to be dispensed with, retaining "exception reporting, i.e., reports made only when activities and objectives are not achieved as expected.

4. The Plan allows USAID to schedule monitoring and reporting responsibilities so as to achieve economies of scale and avoid placing unrealistic information processing burdens on any one individual.

Method of Use:

USAID project implementation officers need two different kinds of monitoring information. First, a large amount of formal information is required for tracking planned project performance (via the use of established quantity, quality, and time targets). The Monitoring Plan can be used to identify and display which items should be formally monitored on either a periodic or episodic basis. The Monitoring Plan is explicit with respect to formal tracking information and available data sources from which information should be gathered.

The gathering of this information often requires going to the field for site visits and discussion with project and government personnel.

A second kind of monitoring information is more informal in nature. Informal information on changing conditions in the internal and external project environment is required for anticipating implementation difficulties and taking appropriate corrective action. The Monitoring Plan is only marginally useful for identifying and gathering the more informal type of information. There is no simple formula for monitoring this kind of information. The best mechanism we know is to maintain contacts with key personnel, to hold regular meetings with officials important to project success, and to assemble working groups when problems arise.

The specific ways the Monitoring and Reporting Plan is used are discussed below.

1. The plan contains information drawn from the Implementation LogFrames, the Implementation Bar/Responsibility Charts, the Sub-routines, the Performance Networks and the Early-warning and Back-up System Charts. It summarizes the monitoring and reporting tasks identified in these documents, and should be used in conjunction with them.

2. Each project officer should consult the Monitoring and Reporting Plan to identify what items or milestones to watch, when they are to be watched, where to find the information, and what kind of report, if any, to file once monitoring is completed.

3. Some monitoring tasks are periodic, i.e. they occur at prescribed times or intervals, irrespective of project times or intervals, irrespective of project activities or achievements. Others are episodic, i.e., keyed to the completion of various activities or the achievement of various objectives. The former can be scheduled well in advance with relative certainty. The timing of episodic monitoring is, by its nature, less certain.

4. The reporting requirements noted in the Plan refer to the reports to be written by project officers. Reports received by USAID officers from contractors, government officials and others constitute the data sources for meeting monitoring requirements.

5. The Plan distinguishes three types of reports; exception reports, achievement reports, and regular reports. Exception reports are filed when something expected, and important, fails to occur or is likely to fail. Achievement reports announce the achievement of an expected and important result. Periodic reports track activities, expenditures or achievements at pre-determined times. As a general rule, achievement and/or exception reports should be substituted for periodic reports whenever circumstances permit.

Preparation and Modification:

1. Items and milestones to be monitored are drawn from the Implementation LogFrames, Bar/Responsibility Charts, Sub-routines, Performance Networks and Early-warning and Back-up System Charts. On the LogFrames, milestones are contained in performance indicators at the Output and Purpose level in addition to the indicators for the external conditions affecting the Activity-to-Output and Output-to-Purpose linkages. The other Charts and Networks also identify a number of importance interim items and milestones. Watching and influencing these interim activities improves the prospect of achieving LogFrame Output and provides an Early-warning System when these objectives are in danger of not being met.

   When these interim activities and milestones are both important and uncertain they should be added to the list of items to be monitored.

2. As with other implementation system tools, the Monitoring and Reporting Plan must be regularly reviewed and updated. Completed monitoring responsibilities and terminated project components should be deleted; changes in indicators, targets and data sources should be recorded; and changes in reporting requirements and responsibilities should be noted. One staff member should assume primary responsibility for ensuring that this updating occurs at least twice a year.

FIGURE II F-1: MONITORING AND REPORTING PLAN FORMAT

PROJECT COMPONENT: 5. AFC Technical Assistance (Host Country Contracting) SEPTEMBER, 1979

ITEM OR MILESTONE TO BE MONITORED	PERIODIC (P) OR EPISODIC (E)	TIMING OF MONITORING	INDICATOR	TARGET	DATA SOURCE	REPORT: EXCEPTION (Ex) ACHIEVEMENT (Ac) PERIODIC (Pe)	
Conditions Precedent are met	E	before activities begin	Progress of GOK in meeting conditions	all conditions met	GOK, AFC budgets, records		
PIL and RFP approved	E	before proposals requested	timely approval by AID	GOK formulates quality RFP, USAID prepares timely PIL	USAID records		
High quality contracts signed by GOK	E	prior to contract period	description of contract deliverables, contract monitoring system	clear specifications of objectives, evaluation criteria	GOK contract		
Informal project environment checked	E	continuously through contract activities	attitudes of other actors, political climate	strong support and enthusiasm maintained	informal contacts		
Contractor progress checked	P	every 6 months	comparision of actual to planned activities	technical assistance is timely and appropriate to AFC needs	Contractor reports AFC records		
Expenditure of funds checked	P	quarterly through contract activities	periodic claims for reimbursement	funds spent according to project specifications	GOK quarterly financial reports		
GOK support checked	P	every 6 months	availability of logistic support, trainees, AFC cooperation, budget support	timely provision of resources, trainees, institutional support	AFC budgets, records, Contractor reports		
TA completed	E	end of contract period	degree to which contractor has fulfilled obligations	AFC receives 168 MM of technical services geared to institutional training needs	Contractor final report AFC records		
Evaluation of TA in AFC	E	6 months after contract period ends	degree of change in AFC capability	financial management and personnel operations and training strengthened and broadened	AFC records		
Evaluation of AFC	E	January, 1985	degree of change in institutional capability	25% increase in AFC loans			

EARLY-WARNING AND BACK-UP SYSTEM CHARTS

Description

An Early-warning and Back-up System Chart displays:

(1) anticipated implementation problems; (2) Early-warning indicators for each of the problems; and (3) possible ways of dealing with the problem if it occurs. The completed Chart represents a project specific application of the "Contingency Planning" technique.

Implementation Uses:

1. Identifies important problems that project officers believe-- based upon their experience and knowledge-- are in danger of occurring.

2. Focuses management attention on the development and use of Early-warning problem indicators. These indicators should be included in the project Monitoring and Reporting Plan.

3. Serves as a worksheet for thinking through appropriate responses to potentially serious problems before they actually occur.

Method of Use:

The Early-warning and Back-up System Chart should be used from the beginning to the end of the project implementation process. From the time that the first project implementation agreement is signed, USAID project officers should have an eye out for likely problems and for low-cost, quick-response resolutions. The Early-warning and Back-up System Chart provides a standardized and systematic way of keeping informed of potential implementation difficulties.

The project officer can use the Chart in three ways. By referring to Columns A and B, information can be gained on likely and important problems about which the project officer will want to devote a significant portion of time. The second use is in keeping a helpful record of important "Early-warning indicators". The project officer will want to periodically check to ensure that Early-warning information is being properly collected and distributed. Column C will facilitate this effort. Finally, when a problem does occur, the project officer can refer to Column D to see if a previously thought-out and agreed upon response exists. Having access to such information can substantially reduce the response time, especially when new personnel or complex actions are involved.

Preparation and Modification:

Early-warning and Back-up System Charts should be prepared in conjunction with or following the preparation of Performance

Networks, Bar/Responsibility Charts, and the Monitoring/Reporting Plan. The Charts should be modified periodically and also following important implementation revisions. The procedures for preparing and modifying each column of the Chart are explained below.

1. Column A: "Key Project Activity" In this column the project officer should list the most important activities from the project or sub-project component covered by the Chart. "Important" activities may include those that fall on the "critical path" of the Performance Network or those that must be completed before a large number of follow-on activities can begin. The judgment of experienced professionals is another source of information for making this determination.

2. Column B: "Anticipated Implementation Problem(s)." This is where potential problems related to the successful completion of Column 1 activities are listed. Problems may be characterized by a divergence between planned and actual completion dates as listed in the Bar/Responsibility Chart. They may also involve performance or cost deviations from planned targets. Instances of early completion of an activity, cost savings, and performances overachievement should also be noted, as they represent opportunities for making up lost time or improving implementation performance in other areas or projects. In all cases, greatest attention should be given to those problems which are most likely to occur.

3. Column C: "Early-warning Indicator(s)". This column and those following it only need to be completed when problems are anticipated and the problems are potentially very important. In these cases, pose the question: "How can the problem be detected very early-on?" Answers may be derived from a review of the Implementation LogFrames, Subroutines, Performance Networks, or Bar/Responsibility Charts. However, in many instances the existing Implementation System products will not have dealt with this issue adequately. Therefore, the project officer will need to trace the activity back to an early stage and identify a suitable indicator for the problem. Once an early warning indicator and a means of monitoring it are identified, the Monitoring/Reporting Plan should be revised to include the element. Since the monitoring date and person to receive the monitoring report are key to timely and effective implementation responses, they should be clearly demarcated in the Plan.

4. Column D: "Back-up Response(s)" If a problem is detected early-on, the project officer will then want to consider the special actions that may be required to deal with the problem before it becomes severe and seriously disrupts implementation. Completing this column is the task of an experienced project officer who has a grasp of available and appropriate problem solving options.

PROJECT: Illustrative Technical Assistance SUB-PROJECT: Contracting DATE

A	B	C	D
Key Project Activity (from Bar/Responsibility Chart or Performance Network)	Anticipated Implementation Problem(s) (what are likely deviations from plan?)	Early-warning Indicator(s) (how can problem be detected early-on?)	Back-Up Responses(s) (What can be done to deal with problem early-on?)
1. Technical Assistance Contract successfully negotiated by July 1980	Negotiations will not be completed until January 1981	Contract Scope-Of-Work should be started by USAID and host country officials by November 1979	a) If Scope-Of-Work not started by November 1979, free-up one person to work full-time on it b) Call for TDY assistance on Scope-Of-Work
2. Contractor arrives at work-site within 1 month of contract signing	None detected		
3. Etc.			

RECOMMENDATIONS

1. Meeting with User-Institutions. In order to develop understanding of the Project goals and purposes and support project activities, a meeting among User-Institutions, Project Team and MOE is recommended. The purpose of this meeting would be to develop a shared vision of the Project's aims and the roles and responsibilities of project actors. It would also be a time to explain that many of the degree graduates who would normally enter agricultural agencies, will be recruited as faculty. At the same time some agency employees might be recruited to the university. This is a time to underscore the long term benefits to these organizations in contrast to the short term loss.

2. Meeting with MOA and MOL. A similar meeting with the agricultural ministries concerned should be conducted. Model extension programs, teacher training of Agricultural College teachers and other programs will require ministry cooperation. This cooperation should be redefined at the outset of the project.

3. Scopes of Work and Job Descriptions. After recruitment and prior to departure for MA study programs, new faculty should be given clear scopes of work and comprehensive job descriptions. The university administration specialist can assist. The rationale for doing this is that, with a clear idea of their role and responsibilities prior to departure, faculty can better focus their program of study. Their academic and professional endeavors in the U.S. may be more clearly directed toward real and specific objectives. They will, in fact, be given very specific duties upon return. Knowing them ahead of time can only increase effectiveness.

4. Management Training for Core Project Staff. This has been recommended and discussed. It is worth mentioning again. The benefits of a unified team, competent in the use of an integrated project implementation system can not be over-estimated. This can be accomplished in two to three weeks. As a team building device, a management seminar/workshop can quickly solidify a working team. When an implementation team revises or develops log frames, networks, bar graphs, etc, they develop ownership and commitment. The rule is: those who are to implement a project should participate in the design of the project.