THE U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
COLOMBO, SRI LANKA

A SYSTEM FOR "PURPOSE-LEVEL" MONITORING (PLM) ECONOMIC & SOCIAL DEVELOPMENT PROJECTS

CASE 3

AGRICULTURAL PLANNING & ANALYSIS PROJECT [APAP]

(383-0083)

(CONTRACT # 499-0000-0-00-1030-00)

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PREFACE

The purpose of the Scope of Work under this contract was to assist USAID/Sri Lanka develop a system for "purpose-level" monitoring (PLM) of the Mission's project portfolio. PLM is intended to provide USAID senior staff, project managers, project contract teams and Sri Lankan Government (GSL) counterparts with a semi-annual summary of information to assess project implementation progress and alert senior management to issues requiring their attention. PLM should thus serve as an "early warning" system to guide decision-making regarding modifications or adjustments, and future project directions.

Consistent with the intent of the Scope of Work, a prototype PLM System has been designed, developed, computerized and applied to two major components of the Development Studies & Training (DS&T) Project, as separate case studies -- the Irrigation Management Policy Support Activity (IMPSA), and the Housing Finance Support Activity. A full discussion of the System rationale, design, development, constraints and recommendations was contained in the initial Case Study document. This document presents a third test case on a separate project -- Agricultural Planning & Analysis -- to illustrate the PLM System.[1]

Kenneth F. Smith
Colombo, Sri Lanka
17 June 1991

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[1] An interactive Lotus 1-2-3 "Macro" System -- \PLM>APAP.WK0 -- as requested by USAID.

PURPOSE-LEVEL MONITORING (PLM) SYSTEM DESCRIPTION

Institution-Building (IB) Projects are designed to upgrade the professional, technical and development management capabilities of public professionals, as well as improve the physical infrastructure of their organizations to enhance their capacity to function effectively. Such IB projects differ significantly from technical "blueprint"-type development projects in that the purpose of the project is to introduce selected interventions to bring about the means for change; rather than directly making such changes. Thus the process towards instituting the increased capacity for planning, development administration and policy reform -- i.e. the critical events agenda -- is monitored; rather than recording quantitative statistical indicators of the nation's socio-economic state and attempting to interpolate progress towards attainment of "more/better" levels of production and/or economic/social well-being in the sector where the project is housed.

The Purpose-Level Monitoring (PLM) System proposed for USAID/Sri Lanka's Institution Building Projects is primarily a chart and graphic checklist representation of the project. The chart/checklist is used in conjunction with two interactive Lotus 1-2-3 programs to define the project plan and record the current status in statistical summary terms. The "Package" is comprised of eight major elements, as follows:

1. Project Background Statement -- A Narrative Summary Statement of Project Purpose-Level Objectives and miscellaneous key statistical data[1]

2. Activity Rationale & Critical Events Flow Chart -- A computer-developed format based on the Project Paper, Project Agreement and/or Project Work Plan.[2]

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[1]Essentially the type of information and format contained in the Mission's current Project Implementation Report (PIR) is appropriate. The data should be based on the Project Paper (PP), Project Agreement (ProAg), and/or current Work Plan.

[2]Specifically the information in this chart is a modification of the Project Logframe to reflect current implementation experience and perceptions of what is realistic, and the major steps towards attaining those ends -- i.e. the Project Purpose.

3. Workplan and Schedule of Critical Events. A computerized matrix of target dates for accomplishing/reaching the major critical events (and/or listing of key components) -- based on time estimates from the Project's current Implementation Plan.[3]

4. Project Manager's Periodic Reporting Format -- a manually-updated checklist of the Current Status of Critical Events -- prepared by the appropriate GSL manager, contractor, or USAID project manager.[4]

5. Time Series Spreadsheet An interactive checklist of critical events for the Project Manager Periodic Report, computing the project's Status, and comparing Progress against the Plan[5]

6. Analytical Worksheet of Project Manager's Periodic Report[6]

7. Graphic Analysis (Time Series)[7]

   1. Project Progress towards Purpose-level End of Project Status (EOPS) -- Cumulative Line Graph [APAPCUM]

   2. Project Current Status vs Cumulative Plan to Date -- Histogram of Percentage Deviation from Plan [APAPDEV]

   3. Project Cumulative Performance of the rate of accomplishing work and expending funds, as compared to the Project Budget and Work Plan -- "S-Curve" [APAPSCRV]

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[3]An interactive Lotus 1-2-3 macro PLM>APAP.WK0. [The data could also be developed and/or derived from an updated time-phased Bar Chart or PERT/CPM Network.]

[4]The format is computer-generated [Flowchart II+ software] -- combined with the Activity Rationale & Critical Events Flowchart (identified as Item 2 on the previous page).

[5]Intrinsic to the Lotus 1-2-3 PLM>APAP.WK0 macro software program.

[6]Either computer-generated as a by-product of the Lotus 1-2-3 PLM>APAP.WK0 macro software program; or manually updated from the Lotus data.

[7]These graphs are produced by Lotus 1-2-3 as by-products of the Time Series Spreadsheet data.

8. Narrative Analysis of Project Status -- Prepared by the implementing GSL project manager, contractor and/or USAID Project Officer.

The first seven of these elements are illustrated on the following pages with respect to the Agricultural Planning & Analysis Project.

AGRICULTURAL PLANNING & ANALYSIS

PROJECT BACKGROUND STATEMENT

The Agricultural Planning & Analysis Project is a $7.3 million Institution-Building effort to develop an integrated national-level agricultural planning system which can provide a rational basis for policy formulation and decision-making in Sri Lanka's agricultural sector.

Specifically, the objective is to improve the analytical capability of planning units in the following five [illegible] line ministries, and enhance their impact on policy formulation and collective decision-making.

1. Ministry of Agricultural Development & Research
2. Ministry of Plant Industry
3. Ministry of Land, Irrigation & Mahaweli Development
4. Ministry of Fisheries & Aquatic Resources
5. Ministry of Policy Planning & Implementation

As a consequence of a major decentralization movement by the national government towards Provincial Councils, APAP is now expanding its role -- as recommended by a mid-term project evaluation -- to assist in developing agricultural planning units in six Provinces:

1. North West Province
2. Central Province
3. North Central Province
4. Southern Province
5. Uva Province, and
6. Sabaragamua Province

The flow-chart on the following page outlines the Rationale and Critical Events of the Agricultural Planning & Analysis Project to be monitored by the PLM System.[1]

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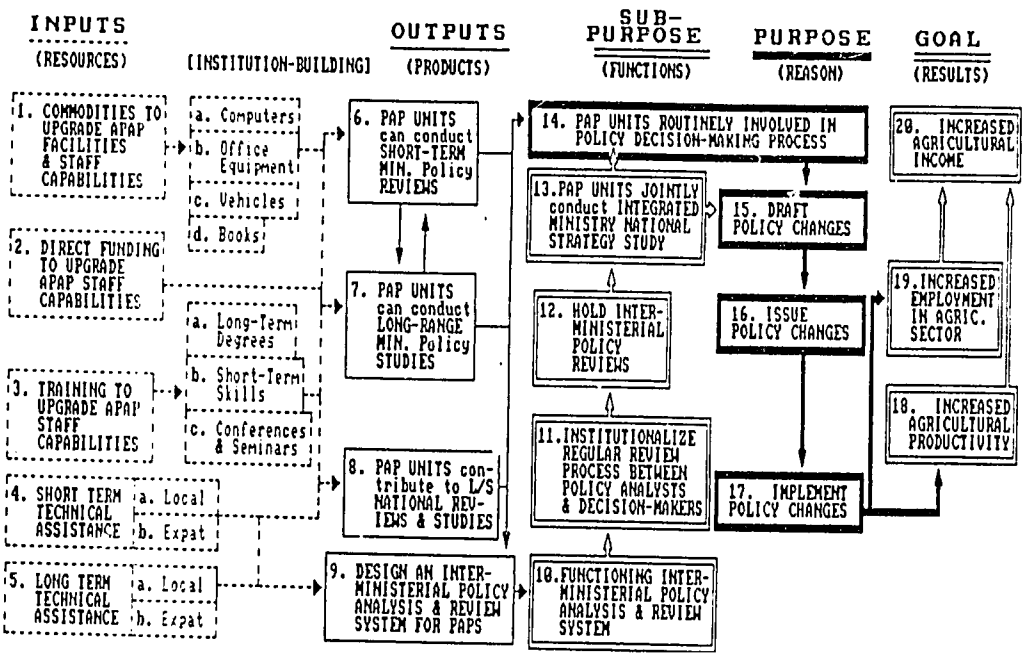
[1]This Rationale and Critical Events were developed through discussions with USAID/Sri Lanka's Project Managers Jim Goggin and Seneka Abeyratne, and Dr. Rolando Jiron, Chief of Party ABT Associates -- the implementing Contractor.

AGRICULTURAL PLANNING & ANALYSIS PROJECT
[APAP] (383-0083)
ACTIVITY RATIONALE & CRITICAL EVENTS

Proj Auth Date:	28 Aug 86
Life of Project:	7 Yrs
LOP Funding $M :	6.6 USGr
Latest PACD:	31 Aug 93
Next Evaluation:	1992



AGRICULTURAL PLANNING & ANALYSIS PROJECT (APAP)

CRITICAL EVENTS

INPUTS

1. Commodities to Upgrade APAP Facilities & Staff Capabilities

   a. Computers
   b. Office Equipment
   c. Vehicles
   d. Books

2. Direct Funding to Upgrade APAP Staff Capabilities

3. Training to Upgrade APAP Staff Capahilities

   a. Long-Term Degrees
   b. Short-Term Skills
   c. Conferences & Seminars

4. Short-term Technical Assistance

   a. Local
   b. Expatriate

5. Long-term Technical Assistance

   a. Local
   b. Expatriate

ACTIVITIES & OUTPUTS

6. PAP UNITS can conduct SHORT-TERM Ministry Policy Reviews

7. PAP UNITS can conduct LONG-RANGE Ministry Policy Studies

8. PAP UNITS contribute to Long & Short-Term NATIONAL REVIEWS & STUDIES

9. Design an Inter-Ministerial Policy Analysis & Review System for PAPS

SUB-PURPOSE

10. Functioning Inter-Ministerial Policy Analysis & Review System

11. Institutionalize Regular Review Process Between Policy Analysts & Decision-Makers

12. Hold Inter-Ministerial Policy Reviews

13. PAP Units Jointly conduct Integrated Ministry NATIONAL STRATEGY STUDY

PURPOSE

14. PAP Units Routinely Involved in Policy Decision-Making Process

15. Draft Policy Changes

16. Issue Policy Changes

17. Implement Policy Changes

GOAL

18. Increased Agricultural Productivity

19. Increased Employment in Agricultural Sector

20. Increased Agricultural Income

Progress in developing an effective Planning & Analysis Policy Unit in each of the Ministries and Provincial Councils outlined in the Project Background Statement will be monitored by the Purpose-Level Monitoring System.

WORKPLAN & SCHEDULE OF CRITICAL EVENTS TO BE MONITORED

B11: (D3) U [W10] @DATE(91,3,1) READ

	A	B	C	D	E	F	G
1	TO MODIFY PLANNING DATES: Move Cursor to appropriate cell						
2	HIT F2 Key; Then EDIT @DATE(89,10,1) -- i.e. 1 Oct 89						
3	WHEN UPDATING IS COMPLETE, HIT: [ENTER] [ENTER] [ALT] C						
4							
5							
6	AGRICULTURAL PLANNING & ANALYSIS PROJECT (APAP) (383-0083)						
7	WORK PLAN - Estimated DATES to complete various critical events						
8		OUTPUTS				SUB-PURPOSE	
9	ACTIVITY	6	7	8	9	10	11
11	Min Ag Dev	Mar-91	Aug-93	Jan-93	Aug-93	Aug-93	Mar-91
12	Min Plant	Mar-91	Aug-93	Jan-93	Aug-93	Aug-93	Aug-93
13	Min LI&MD	Mar-91	Aug-93	Jan-93	Aug-93	Aug-93	Aug-93
14	Min Fish &	Mar-91	Aug-93	Jan-93	Aug-93	Aug-93	Aug-93
15	Min Pol Pl	Mar-91	Aug-93	Jan-93	Aug-93	Aug-93	Mar-91
16	ProvC NWP	Mar-92	Aug-93	Jan-93	Aug-93	Aug-93	\\\\\\\\\\
17	ProvC CP	Sep-92	Aug-93	Jan-93	Aug-93	Aug-93	\\\\\\\\\\
18	ProvC NCP	Sep-92	Aug-93	Jan-93	Aug-93	Aug-93	\\\\\\\\\\
19	ProvC SP	Mar-92	Aug-93	Jan-93	Aug-93	Aug-93	\\\\\\\\\\
20	ProvC UVA	Sep-92	Aug-93	Jan-93	Aug-93	Aug-93	\\\\\\\\\\

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	A	H	I	J	K	L	M
8				PURPOSE			
9	ACTIVITY	12	13	14	15	16	17
11	Min Ag Dev	\\\\\\\\\\\\\\\\\\\\		Mar-91	Dec-92	Aug-93	Jan-2000
12	Min Plant	\\\\\\\\\\\\\\\\\\\\		Sep-92	Dec-92	Aug-93	Jan-2000
13	Min LI&MD	\\\\\\\\\\\\\\\\\\\\		Sep-92	Dec-92	Aug-93	Jan-2000
14	Min Fish &	\\\\\\\\\\\\\\\\\\\\		Sep-92	Dec-92	Aug-93	Jan-2000
15	Min Pol Pl	Sep-92	Aug-93	Mar-91	Dec-92	Aug-93	Jan-2000
16	ProvC NWP	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	Jan-2000
17	ProvC CP	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	Jan-2000
18	ProvC NCP	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	Jan-2000
19	ProvC SP	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	Jan-2000
20	ProvC UVA	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\	Jan-2000

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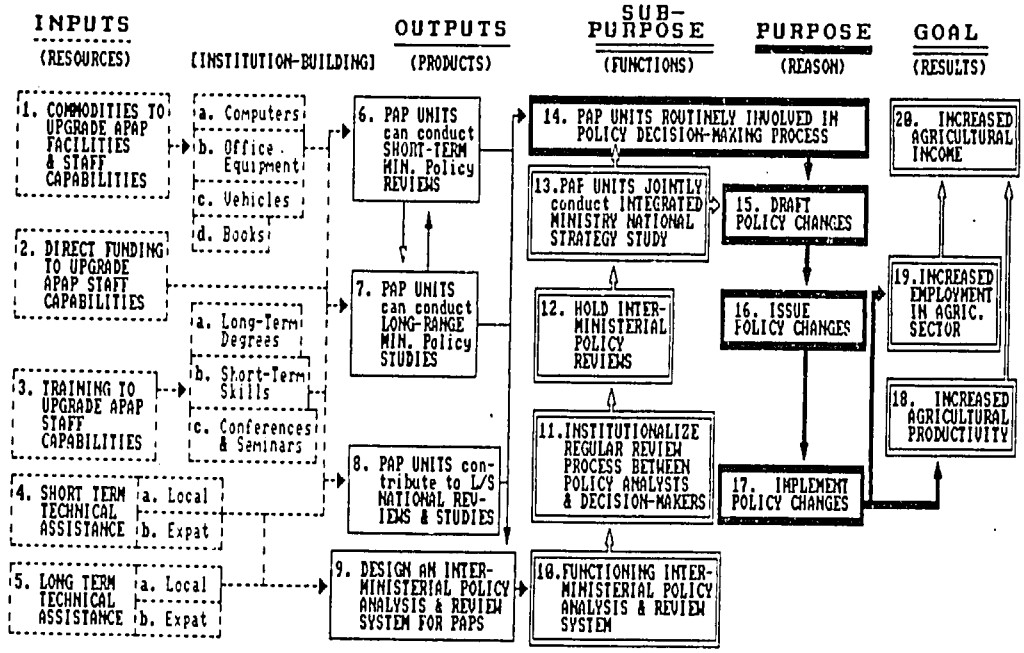
AGRICULTURAL PLANNING & ANALYSIS PROJECT
[APAP] (383-0083)
ACTIVITY RATIONALE & CRITICAL EVENTS

Proj Auth Date:	28 Aug 86
Life of Project:	7 Yrs
LOP Funding $m :	6.6 USGr
Latest PACD:	31 Aug 93
Next Evaluation:	1992



PROJECT IMPLEMENTATION & PURPOSE LEVEL MONITORING REPORT

SECOND QUARTER FY 91 (31 MARCH 1991)

% Time Elapsed:	64 %
$m Obligated:	6.6 m
Earmarked:	4.4 m
Commitments:	4.2 m
Disbursements:	2.3 m
Pipeline:	4.3 m
% Disbursed:	35 %

CURRENT STATUS of CRITICAL EVENTS

CHECK IN THE BLOCKS BELOW WHEN:

1. ACTIVITY IS COMPLETED, and/or
2. LEVEL OF EFFORT IS SATISFACTORY.

OTHERWISE:- LEAVE BLANK

	INPUTS												OUTPUTS				SUB-PURPOSE				PURPOSE			
PAP UNIT ORGAN'ZN	1a	1b	1c	1d	2.	3a	3b	3c	4a	4b	5a	5b	6.	7.	8.	9.	10	11	12	13	14	15	16	17
Min Agr. Dev & Res'ch																								
Min Plant Industry																								
Min Land Irr Mahaweli																								
Min Fish & Aq Resource																								
Min Pol Plan/Implement																			←	←				
Prov. Council - NWP																								
Prov. Council - CP																								
Prov. Council - NCP																								
Prov. Council - SP																								
Prov. Council - UVA																								
Prov. Cncl - S'GAMVA																								

TIME-SERIES SPREADSHEET

For Recording and computing Project Manager's Periodic Report, and comparing Progress against Plan

The total number of items to be monitored -- i.e. the appropriate number of critical activities & events identified in the chart, multiplied by the number of major objective line items -- is converted to 100%. This constitutes the "agenda" to be monitored. For monitoring purposes, each item is then assigned an equal weighted percentage. [In this instance, there are 88 items; thus the weight for each item is 1.14%][1]

When the planned date for completing each item is reached, its weight is allocated to (and included in) the computation of the "planned percentage to date" for that item.

When the activity is checked "X" -- i.e. as having been satisfactorily completed -- weighted credit is given for that item in computing "progress to date".

A comparison of the summations for the Actual and Planned columns thus reveals the performance against plan in percentage terms.[2]

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[1]Although obviously not all agenda items are of equal importance, attempting to assign relative weights is a highly subjective process which complicates the monitoring process -- for relatively little immediate benefit, as discussed in footnote 2 below.

[2]If individual agenda items were weighted differently, since performance is monitored primarily in terms of deviation from the plan rather than simply as a percentage of the total life-of-project, differential weights for agenda items would be balanced in this process. Therefore, initially, the major difference would be the shape of the curve representing the rate of planned progress. Thus, although differential weighting may ultimately be desired, because of the complications introduced by subjectivity, it is not recommended at this time. A significant advantage of differential weighting is that it would highlight the need for management attention on priority agenda items that fell behind schedule. [Note: It is an easy process to modify the Lotus 1-2-3 \PLM>APAP.WKO Macro to accomodate differential weighting, when needed.]

AE15: U [W10] 'X

READ

	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	TO UPDATE: Use [CTRL]+Arrow keys to Move Cursor to TIME FRAME & cell								
2	ENTER "X" If Activity is Satisfactorily Completed								
3	OTHERWISE -- LEAVE BLANK (NOTE: Use /re [ENTER] to delete errors)								
4	---								
5	WHEN YOU HAVE FINISHED UPDATING CURRENT STATUS, HIT: [ALT] C								
6	AGRICULTURAL PLANNING & ANALYSIS (APAP) PROJECT (383-0083)								
7									
	Z	AA	AB	AC	AD	AE	AF	AG	AH
8				STATUS AS OF:		2ndQ FY91			
9						Mar-91			
10						ENTER "X"			
11	LINE	OBJECTIVE/ ACTIVITY	EVENT NO.	WEIGHT	PLANNED COMP DATE	if SATIS. COMPLETE	ACTUAL	PLAN WEIGHT	
12									
13									
14		MIN AGR DEV & RES				*			
15			6	1.14%	Mar-91	X	1.14%	1.14%	
16			7	1.14%	Aug-93				
17			8	1.14%	Jan-93				
18			9	1.14%	Aug-93				
19			10	1.14%	Aug-93				

16-Jun-91 12:22 AM

ANALYTICAL WORKSHEET OF PROJECT MANAGER'S PERIODIC REPORT

Computer-generated as a by-product of the Lotus 1-2-3 \PLM>APAP.WK0 macro software program[1]

A78: [W10] READ

	A	B	C	D	E	F	G
78							
79							
80	AGRICULTURAL PLANNING & ANALYSIS PROJECT (APAP) (383-0083)						
81	USAID/SRI LANKA						
82							
83	SUMMARY PROGRESS TABLE						
84							
85	AS OF:	2ndQ FY91	3rdQ FY91	4thQ FY91	1st FY92	2ndQ FY92	3rdQ FY92
86	MONTH:	Mar-91	Jun-91	Sep-91	Dec-91	Mar-92	Jun-92
87	PLAN	10%	10%	10%	10%	13%	13%
88	ACTUAL	10%	0%	0%	0%	0%	0%
89	%DEVIATION	0%	-100%	-100%	-100%	-100%	-100%
90							
91							
92							
93	BASELINE	0%	0%	0%	0%	0%	0%
94							
95							
96							
97							

16-Jun-91 12:25 AM

[1]Note: This printout is actually only "as of" the 2nd Quarter, FY 91 (March 1991) update. No entries have yet been made for the quarters beyond that period; therefore the "actuals" show "0". This "zero-based" appraisal aspect -- of requiring a complete reevaluation and update of the project status each period (in this instance quarterly) rather than automatically cumulating progress from the last reported period -- has been deliberately built into the system. It forces the project manager to review and reassess each critical event each period. [reporting/updating is not difficult -- it merely requires a simple checkmark on a checklist]. Zero-based appraisal addresses the reality that occasionally -- for a variety of reasons -- some aspect(s) of the project may backslide and/or additional effort may have to be exerted to reachieve (or maintain) a satisfactory level of accomplishment.

GRAPHIC ANALYSIS

1. Line Graph of Cumulative Peformance for Life of Project -- comparing Actual Progress vs Plan [APAPCUM]

2. Periodic Histogram of % Deviation from Plan for Life of Project -- comparing Actual vs Plan [i.e. 0 baseline in center of chart] [APAPDEV]

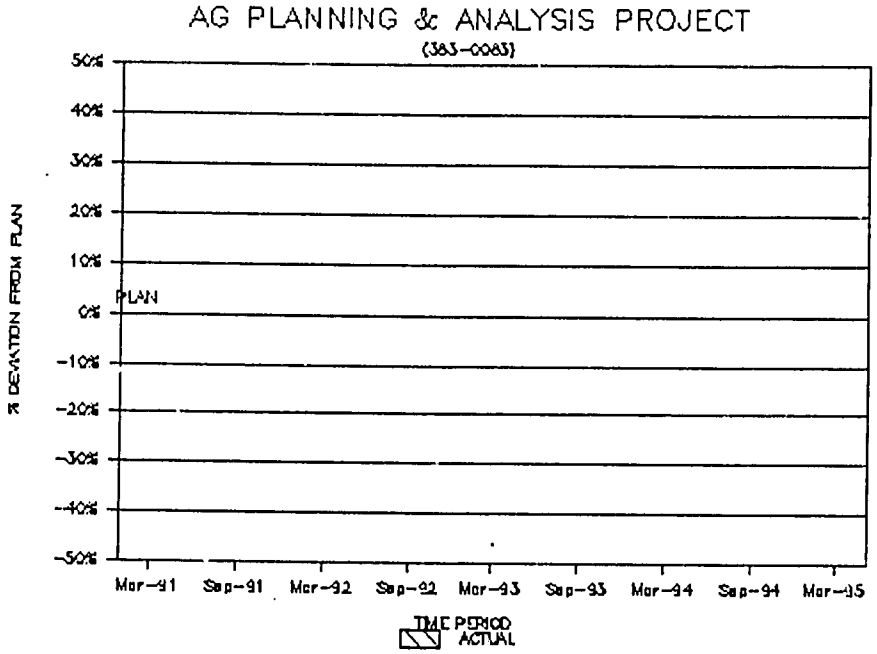
These charts are computer-generated as a by-product of the Lotus 1-2-3 \PLM>APAP.wk0 macro software program for viewing on-screen. However, normal Lotus menu procedures must be utilized to name & save the graphics as unique charts and files; and Lotus PrintGraph subsequently invoked to print copies for documents.

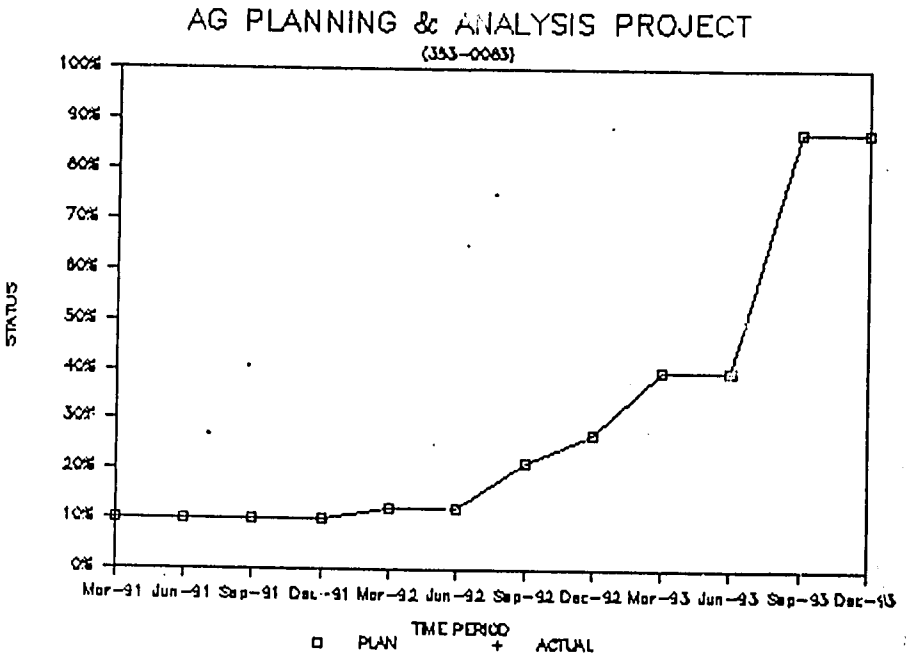
3. "S-Curve" of Cumulative Budget Expenditures for Work Performed for Life of Project -- comparing Actual Progress vs Plan

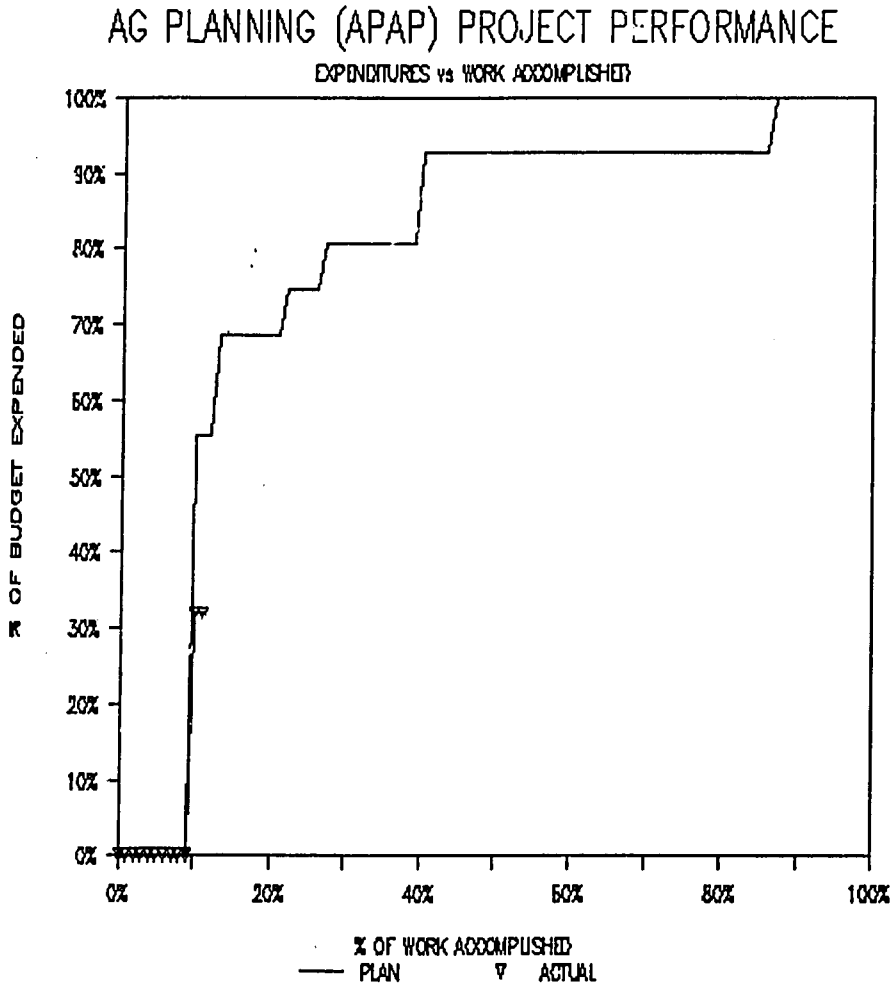
[Note: "X" axis = % of planned work performed
"Y" axis = % of planned budget expended

The intercepts for these two values is then plotted for particular time periods -- as the data becomes available -- for the semi-annual review]

This chart can be produced from the Lotus 1-2-3 \PLM>SCURVE.WK0 macro software program. Budgetary and work plan data, and also performance data are entered interactively, and the graph is automatically generated from this information. However, S-CURVE.WK0 is a Stand-Alone Program and is not linked to APAP.WK0.


AG PLANNING & ANALYSIS PROJECT
(383-0083)
% DEVIATION FROM PLAN
50%
40%
30%
20%
10%
0%
-10%
-20%
-30%
-40%
-50%
PLAN
Mar-91
Sep-91
Mar-92
Sep-92
Mar-93
Sep-93
Mar-94
Sep-94
Mar-95
TIME PERIOD
ACTUAL


AG PLANNING & ANALYSIS PROJECT
(383-0083)
STATUS
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Mar-91 Jun-91 Sep-91 Dec-91 Mar-92 Jun-92 Sep-92 Dec-92 Mar-93 Jun-93 Sep-93 Dec-93
TIME PERIOD
PLAN
ACTUAL


AG PLANNING (APAP) PROJECT PERFORMANCE
EXPENDITURES vs WORK ACCOMPLISHED
% OF BUDGET EXPENDED
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0%
20%
40%
60%
80%
100%
% OF WORK ACCOMPLISHED
PLAN
ACTUAL

SUMMARY, LESSONS LEARNED & RECOMMENDATIONS

SUMMARY

The foregoing pages outline a basic working method for systematically monitoring the performance and progress of an Institution Building (IB)-type Project towards attaining its Purpose-level objectives.

The methodology is relatively easy to apply -- and can be used either manually, or semi-automatically, by modifying the two interactively designed LOTUS 1-2-3 Macros:

\PLM>APAP.WK0 and \PLM>SCURVE.WK0

The basic pre-requisites for using the complete System are:

1. A Clearly Defined Objective, and the Means for Attaining it -- i.e. an Updated Logical Framework Statement

2. A Time-Phased Plan of Action -- i.e. A Project Workplan, with major Milestones and Critical Events/Activities and estimated dates for attaining them

3. A Time-Phased Budget related to the WorkPlan

LESSONS LEARNED

Nine major lessons[1] were learned during the development of this prototype system, which Mission Management should take into consideration in deciding whether to continue pursuing this system:

1. In monitoring Institution Building-type Projects, the emphasis must be placed on tracking accomplishment of a series of Critical Events as indicators towards attainment of the Project Purpose. Few quantitative leading indicators of progress are apparent.

2. Even where potentially measurable quantitative leading indicators can be identified in the pertinent sector, no quantifiably-attributable cause-effect linkage exists between project inputs (i.e. technical and financial assistance for studies, training, and commodity inputs) and the fluctuation -- either positive or negative -- of such indices.

3. AID has little or no control over accomplishment of IB-type project Purposes. Improving the host government's capability to formulate agricultural planning and policy is a legitimate development project objective; but the aspect over which AID exercises managerial control[2] -- i.e. USAID's manageable interest -- extends only to the Project Output level. Implementation of "Purpose"-level critical events -- i.e. planning and policy changes -- rests entirely with the Host Country.

4. A "gray area" exists between the Output and Purpose levels. Under the project's auspices -- and with GSL concurrence -- USAID undertook to institutionalize a process for conducting, and to conduct some specific integrated ministerial studies. While still an accepted and desirable objective of both the USAID and GSL, nevertheless implementation rests entirely with the Host Country. We have therefore designated this intermediate level as a "Sub-Purpose".

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[1]These are modifications of, and an addition (i.e. lesson # 2 below regarding quantitative leading indicator identification and attribution; and # 8 regarding the S-Curve) to the five lessons discussed in the initial report of the same title -- CASE # 1 Irrigation Management Policy Support Activity (IMPSA), Development Studies & Training (DS&T) Project (383-0085), 31 May 1991.

[2]For which AID (and its contractors) can (and should) be held accountable.

5. Project Log-Frames and Work Plans are not always consistent[3] or current. Major changes have occurred (and are continuing to occur) within the GSL management structure *vis a vis* delegation of authority and responsibility from the National Ministries to the Provincial Councils. These changes were noted by the Mid-Term Evaluation, and the Project Managers and implementing Contractor have modified the project workplan and budget to address such changes. It is important to note and react to such changes as a "Learning Process" Project, rather than adhere to (and/or continuing to measure performance by) the original Project Paper and Log-Frame as a "Blueprint". While Work Plans are updated annually, rarely, however do project managers rewrite (and/or reconceptualize) their Logframe.[4] Thus, depending upon the adequacy of such project documentation, and familiarity with the Project, time and effort must be allotted by the USAID Project Officer, the implementing contractor and GSL counterparts to review and rethink the Project through conceptually and -- in effect -- rework the Project Log-Frame.

6. The users -- i.e. USAID Project Managers, Implementing Contractors, and GSL Counterparts on both the DS&T and APAP Projects endorsed the pseudo-LogFrame/Flow Chart depiction of their project rationale as a helpful device for briefing others. They also indicated that the checklist of critical events would be both a useful and non-burdensome method for internal monitoring of inputs -- even though not required to report on them.

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[3]In this instance, a mid-term evaluation noted a major change in the GSL structure and recommended that the APAP Project address this change by extending assistance to a number of Provincial-level organizations -- an additional, originally unforeseen, level of effort.

[4]It took several working sessions (of about an hour each time) with the Project Managers, Implementing Contractor and MIS Consultant to develop the information for the Project Rationale & Critical Events Flowchart, and Schedule outlined here.

7. Although not all Critical Events in the process are of equal importance, attempting to assign relative weights to the different steps is a difficult, highly subjective and time-consuming exercise. Project performance is essentially monitored in terms of deviation from the plan rather than simply as a percentage of the total life-of-project. Thus, weighting does not immediately enhance the efficacy of the monitoring process, but primarily affects the shape of the curve -- i.e. the rate of planned progress. [Ultimately, differential weighting may be desirable as it can highlight the need for management attention on priority agenda items which fall behind schedule.]

8. The S-Curve Technique (and Graph) is a powerful tool for monitoring performance. The S-Curve highlights when Project's costs go "out of control" -- compared to the planned estimates for accomplishing a specific amount of work -- not simply the rate of disbursement provided by standard financial monitoring approaches. APAP cost and work elements were not initially planned for in these terms, and (as with DS&T) some difficulty was anticipated in applying the S-Curve concept retroactively. However, we experienced a major conceptual breakthrough in applying the S-Curve technique, and in fact, found it relatively easy to depict the APAP project in these terms.[5]

In essence, the Project Workplan had recently been reviewed and updated, and the Implementing Contractor was able to provide a time schedule for each the Critical Events in the Flow Chart without much difficulty. Based on the weighting and timing of the agenda of Critical Events, the "Planned Percentage of Work to be Accomplished" was readily computed from this schedule. Similarly, one aspect of the Annual Budget Submission (ABS) was to develop a new time-phased (quarterly) budget for the remaining life of the project, while the Mission's Project Implementation Report provided the expenditures as of the last quarterly reporting period. Again it was a relatively easy to express past and planned future expenditures in terms of quarterly percentage increments.

---

[5]This is a significant change which supersedes the experiences previously noted in the two Development Studies & Training Project cases. As a consequence, I now see no obstacle to applying the S-Curve retroactively to existing projects.

Although the Work Plan, Critical Events Agenda and Budget were not specifically developed as one integrated package[6], sufficient interactive thought, discussion, planning and effort have gone into formulating these aspects that the time-phased percentage budget and time-phased percentage work plan have developed along parallel paths. Interpolating and integrating the work plan and budget percentages at appropriate percentage levels on an X-Y Graph for each quarter provides the next logical linkage.[7] The "S-Curve" depicted here is thus a real one -- not just illustrative as were DS&T Cases #1 & #2 -- and can be used to monitor subsequent performance.

9. Attainment of some of APAP's Purpose-level objectives is considerably -- i.e. several years -- beyond the Life-of-Project for any anticipated USAID involvement. Therefore, the project Purpose will be less than 100% achieved at the PACD, even if the project adheres to its plan. Unless AID can devote additional resources and attention to monitoring the status and progress of Critical Purpose-level Events for inactive projects, subsequent evaluation and audits will have no USAID time-series Purpose-level progress data generated by this system beyond the PACD. Thus, one of the inexorable (and perhaps previously unforeseen) consequences of concentrating on "Performance Level Monitoring" is the "No-Win" syndrome for AID -- project performance will almost always be reported as less than 100% -- even when it is!

---

[6]Which is feasible by PERT/CPM Time-Cost Networking.

[7]Note: Every percentage increment of work can be planned and computed by this method, but budgetary data is only available by quarter. Thus expenditures are aggregated within the time period, with the highest amount (percentage) for the period being plotted. Thus, the resultant "S-Curve" is a jagged step function rather than a smooth curve. Nevertheless, this should be "close enough", and an additional insight into monitoring project performance, along with "pipeline" analysis.

RECOMMENDATIONS

Based on my experience in developing the PLM system for the APAP Project, the following seven recommendations are offered:

1. This Purpose-Level Monitoring System (PLM) can and should be integrated with the Mission's present Project Implementation Report (PIR) System -- as much of the data is required for both.

2. I recommend that the data required by the PLM -- i.e. the status of Critical Events -- be gathered quarterly. Most data is already gathered on a quarterly reporting cycle for the PIR, and integration would be facilitated with very little additional effort if the data for the PLM were on the same cycle.

3. The 2nd and 4th Quarters of the Fiscal Year (i.e. as of the end of March and September) reporting cycles should be used for PLM -- as opposed to the Quarterly Review of Inputs, Outputs, Pipeline Analysis, and/or other aspects under the PIR -- if semi-annual attention is to be focussed on the Project's Purpose-Level. This cycle would minimize difficulties for reporting and review during the Mission's personnel-constrained seasons of Home Leave and Christmas.

4. The work and budgets of new Projects -- and major new components of existing projects -- should be related during the planning phase, and the S-Curve technique applied thereafter to monitor progress. [A Bar Chart (and/or PERT/CPM Networking) System can be used to plan and develop this aspect more efficiently and effectively.[8]]

5. The PLM System (including the S-Curve) can be retrofitted to the Mission's on-going projects (and their major components) by interpolating the data in an updated Work Plan, and the ABS.

6. USAID should procure the Software to draw the flow-charts and reporting formats.[9]

---

[8] Time-line and Microsoft Project are two relatively inexpensive and easy-to-use microcomputer software packages for this purpose -- approximately $500 per set. Primavera is a much more sophisticated (and expensive) software program which incorporates a wide variety of options for comprehensive project planning, design, budgetting and management analysis, and produces superior quality graphics.

[9] FlowCharting II+ 2.40B, Copyright 1986. Patton & Patton Software Corp, 81 Great Oaks Boulevard, San Jose, California, 95119. [I do not know the current price of this package.]

7. If USAID decides to adopt this system, two (or more) permanent staff members should be detailed to work with me intensively for several weeks in an on-the-job action-training mode. Their responsibilities would be learn the techniques for Project Logframe/Flowchart/Checklisting design and development, and applying the PLM system to specific projects by modifying the Lotus 1-2-3 macro-programming.[10] At the conclusion of this brief OJT period, USAID would be in a position to sustain, and continue to apply the system to the remaining USAID projects, and major sub-project components, as well as modify the system in the future.[11]

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[10]The Lotus 1-2-3 Macros in the directory \PLM> -- i.e. IMPSA.WK0, HSG.WK0 and APAP.WK0 -- were specifically designed, tested and refined for USAID/Sri Lanka under this Contract and its immediate predecessor 499-0000-0-00-1029-00, May 1991, and hence are now USAID property. SCURVE.WK0 on the other hand, has not been given to or acquired by USAID, but was only included in the \PLM> directory by me to demonstrate its efficacy. SCURVE.WK0 was independently developed by me as one of several generic interactive Lotus 1-2-3 Macros [collectively in a \STATS> directory] for general project management, statistical survey and analysis purposes. \STATS> is available from me (either directly; or from my home office in Fairfax, Virginia) at $500.00 U.S. per user copy -- with unlimited reproduction authorized for the purchaser's own use. Other copies expressly prohibited. In this instance I would consider the entire USAID/Sri Lanka Mission as the purchaser, for use in analyzing its program and project portfolio. Continued use of SCURVE.WK0 at this time is limited to the three project applications -- 1) DS&T IMPSA, 2) DS&T HSG, and 3) APAP -- developed under these two contracts.

[11]I am available to provide this on-the-job training under a follow-on contract, or at a later date, if so desired.

APPENDICES

SAMPLE COMPUTER "SCREENS"

FROM

\PLM>APAP.WKO

&

\PLM>SCURVE.WKO

A49: [W10] READY

A B C D E F G

A PROTOTYPE PURPOSE-LEVEL MONITORING (PLM) SYSTEM

FOR POLICY DEVELOPMENT/REFORM-TYPE PROJECTS

CASE # 3
AGRICULTURAL PLANNING & ANALYSIS PROJECT (APAP)
USAID/SRI LANKA

(Contract # 499-0000-0-00-1030-00)

Dr. Kenneth F. Smith, Project Management Consultant
4517 Twinbrook Road, FAIRFAX, Virginia 22032 USA
Phone: 703-978-1876

JUNE 1991

16-Jun-91 12:24 AM

A50: [W10] READY

	A	B	C	D	E	F	G
50							
51				INTRODUCTION			
52				============			
53		Unlike typical AID Technical "Blueprint" projects -- which					
54		have physical END PRODUCTS of "More" or "Better" levels of					
55		"Something" for a pre-targetted group of beneficiaries --					
56		PLANNING & ANALYSIS projects usually have no precise quantita-					
57		tive Purpose-level objectives which can be monitored over time					
58							
59		Therefore this system has been developed as a method for					
60		monitoring the PROCESS of accomplishing a series of Critical					
61		steps (compared to a project plan) which lead to the ultimate					
62		PURPOSE of PLANNING &/or IMPLEMENTING macro-POLICY Objectives.					
63							
64		The Critical Events, Work Plan and initial Status were all					
65		developed through close consultation with the USAID Project					
66		Manager, Project Technical Consultants and GSL Counterparts.					
67							
68		WHEN YOU ARE READY TO CONTINUE, HIT THE [ENTER] KEY					
69							

16-Jun-91 12:19 AM CMD NUM CAPS

```
64: [W10]                                                          MENU
PDATE  TARGET  GRAPHICS  PRINT  SAVE  QUIT
pdate the Current Status of the Project
      J         K         L         M         N         O         P
4
5                        DO YOU WANT TO:
6
7            U   -       UPDATE the Project's Current Status
8
9            T   -       Review and/or Modify the Project's Planned TARGET
0                        Schedule for accomplishing "Critical Events"
1
2            G   -       View GRAPHICS of the Current Status vs Project Plan
3
4            P   -       PRINT the Current Status Table of Indicators
5
6            S   -       SAVE the New Data entered in the Target Schedule
7                        and/or Update
8
9            Q   -       QUIT the Program
0
1            SELECT FROM THE MENU ABOVE THE "FRAME" or TYPE THE LETTER
2
3            NOTE:  HIT the [ALT] C keys TO RETURN AND USE THIS MENU
6-Jun-91  12:19 AM                        CMD                  NUM CAPS
```

I40: [W10] READY

	I	J	K	L	M	N	O
40		MACRO MENU					
41							
42		\M	/WGPD{GOTO}I40~				
43							
44		\0	{GOTO}A30~{WAIT @NOW+@TIME(0,0,5)}{PGDN}{?}{START}				
45		\I					
46							
47		START	{GOTO}j64~{MENUBRANCH j61}				
48							
49		SCHEDULE	{HOME}{goto}a8~/wwh{window}/WGPE{GOTO}B10~/WTB				
50			/rib11.M21~{?}{?}{GOTO}B11~				
51							
52		\C	{window}/wwc/WTC/WGPD{BRANCH START}				
53							
54		UPDATE	{GOTO}Z1~{GOTO}Z8~/WWH{WINDOW}/WGPE{GOTO}AE14~/WTB				
55			{GOTO}AE15~				
56							
57		PRINT	/PPRA80.G84~OS\015~mr200~QAGRA85.X89~G				
58			{ESC}{ESC}{ESC}{START}				
59		GRAPHICS	/gv				

16-Jun-91 12:23 AM

B11: (D3) U [W10] @DATE(91,3,1) READY

	A	B	C	D	E	F	G
1	TO MODIFY PLANNING DATES: Move Cursor to appropriate cell						
2	HIT F2 Key; Then EDIT @DATE(89,10,1) -- i.e. 1 Oct 89						
3	WHEN UPDATING IS COMPLETE, HIT: [ENTER] [ENTER] [ALT] C						
4							
5							
6	AGRICULTURAL PLANNING & ANALYSIS PROJECT (APAP) (383-0083)						
7	WORK PLAN - Estimated DATES to complete various critical events						
8		OUTPUTS				SUB-PURPOSE	
9	ACTIVITY	6	7	8	9	10	11
11	Min Ag Dev	Mar-91	Aug-93	Jan-93	Aug-93	Aug-93	Mar-91
12	Min Plant	Mar-91	Aug-93	Jan-93	Aug-93	Aug-93	Aug-93
13	Min LI&MD	Mar-91	Aug-93	Jan-93	Aug-93	Aug-93	Aug-93
14	Min Fish &	Mar-91	Aug-93	Jan-93	Aug-93	Aug-93	Aug-93
15	Min Pol Pl	Mar-91	Aug-93	Jan-93	Aug-93	Aug-93	Mar-91
16	ProvC NWP	Mar-92	Aug-93	Jan-93	Aug-93	Aug-93	\\\\\\\\\
17	ProvC CP	Sep-92	Aug-93	Jan-93	Aug-93	Aug-93	\\\\\\\\\
18	ProvC NCP	Sep-92	Aug-93	Jan-93	Aug-93	Aug-93	\\\\\\\\\
19	ProvC SP	Mar-92	Aug-93	Jan-93	Aug-93	Aug-93	\\\\\\\\\
20	ProvC UVA	Sep-92	Aug-93	Jan-93	Aug-93	Aug-93	\\\\\\\\\

16-Jun-91 10:53 AM CMD

M12: (D3) C [W10] @DATE(99,1,1)+365 READ

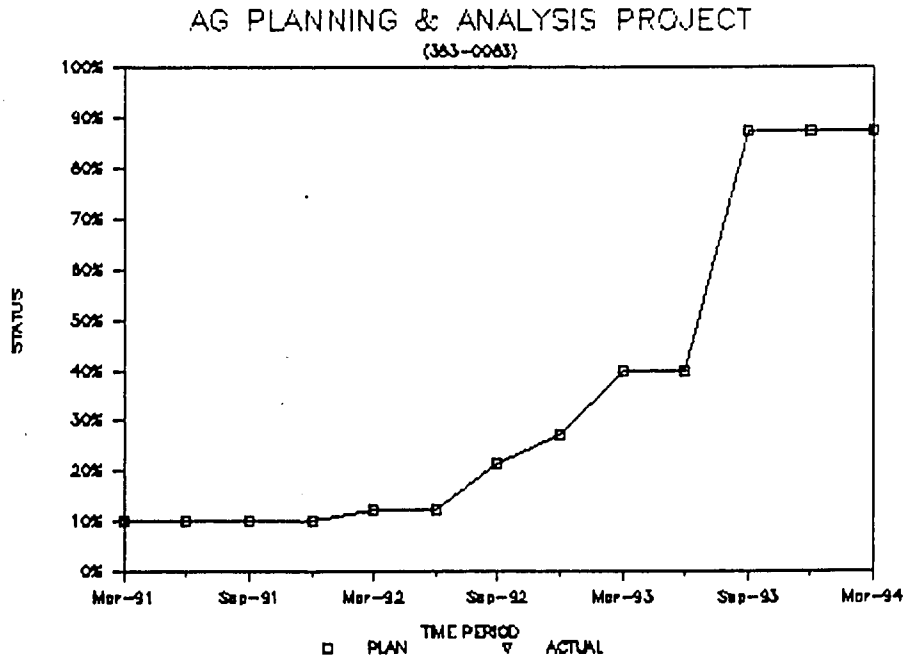
	A	B	C	D	E	F	G
1	TO MODIFY PLANNING DATES: Move Cursor to appropriate cell						
2	HIT F2 Key; Then EDIT @DATE(89,10,1) -- i.e. 1 Oct 89						
3	WHEN UPDATING IS COMPLETE, HIT: [ENTER] [ENTER] [ALT] C						
4	---						
5							
6	AGRICULTURAL PLANNING & ANALYSIS PROJECT (APAP) (383-0083)						
7	WORK PLAN - Estimated DATES to complete various critical events						
	A	H	I	J	K	L	M
8				PURPOSE			
9	ACTIVITY	12	13	14	15	16	17
11	Min Ag Dev\\\\\\\\\\\\\\\\\\\\			Mar-91	Dec-92	Aug-93	Jan-2000
12	Min Plant \\\\\\\\\\\\\\\\\\\\			Sep-92	Dec-92	Aug-93	Jan-2000
13	Min LI&MD \\\\\\\\\\\\\\\\\\\\			Sep-92	Dec-92	Aug-93	Jan-2000
14	Min Fish &\\\\\\\\\\\\\\\\\\\\			Sep-92	Dec-92	Aug-93	Jan-2000
15	Min Pol Pl	Sep-92	Aug-93	Mar-91	Dec-92	Aug-93	Jan-2000
16	ProvC NWP \\						Jan-2000
17	ProvC CP \\						Jan-2000
18	ProvC NCP \\						Jan-2000
19	ProvC SP \\						Jan-2000
20	ProvC UVA \\						Jan-2000

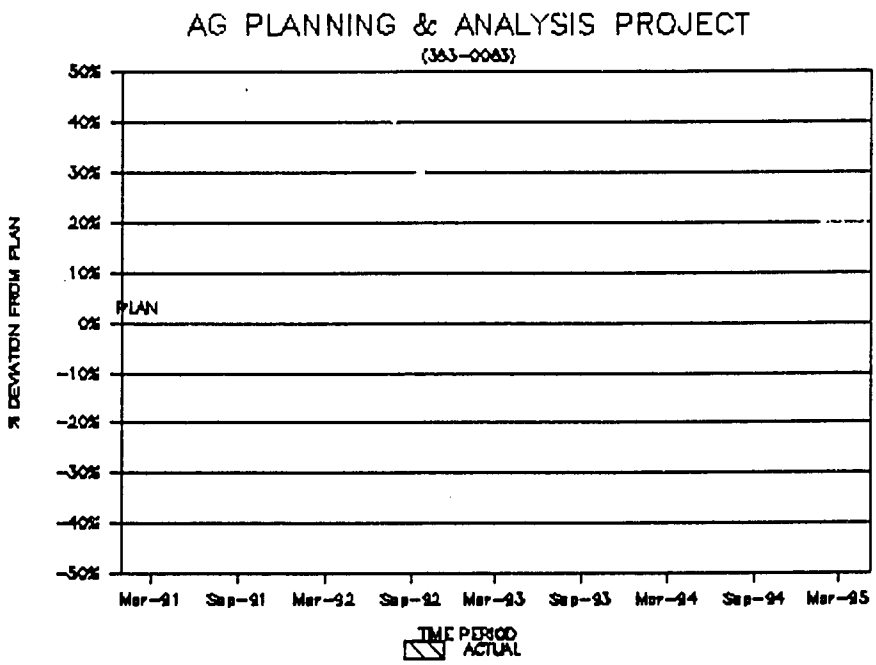
16-Jun-91 10:54 AM CMD

C15: U [W10] 'X READY

```
   Z        AA          AB     AC       AD        AE        AF      AG  AH
    TO UPDATE: Use [CTRL]+Arrow keys to Move Cursor to TIME FRAME & cell
     ENTER "X" If Activity is Satisfactorily Completed
     OTHERWISE -- LEAVE BLANK (NOTE: Use  /re [ENTER] to delete errors)
   ------------------------------------------------------------------------
     WHEN YOU HAVE FINISHED UPDATING CURRENT STATUS, HIT:  [ALT] C
       AGRICULTURAL PLANNING & ANALYSIS (APAP) PROJECT (383-0083)

   Z        AA          AB     AC       AD        AE        AF      AG  AH
                           STATUS AS OF:   2ndQ FY91
                                             Mar-91
0                                          ENTER "X"
1    LINE OBJECTIVE/   EVENT        PLANNED  if SATIS. ACTUAL  PLAN
2    ACTIVITY           NO. WEIGHT COMP DATE COMPLETE      WEIGHT
3
4    MIN AGR DEV & RES                      *
5                        6   1.14%  Mar-91 X           1.14%  1.14%
6                        7   1.14%  Aug-93
7                        8   1.14%  Jan-93
8                        9   1.14%  Aug-93
9                       10   1.14%  Aug-93
6-Jun-91  10:55 AM
```


AG PLANNING & ANALYSIS PROJECT
(363-0063)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
STATUS
Mar-91
Sep-91
Mar-92
Sep-92
Mar-93
Sep-93
Mar-94
TIME PERIOD
PLAN
ACTUAL


AG PLANNING & ANALYSIS PROJECT
(363-0063)
50%
40%
30%
20%
10%
0%
-10%
-20%
-30%
-40%
-50%
% DEVIATION FROM PLAN
PLAN
Mar-91
Sep-91
Mar-92
Sep-92
Mar-93
Sep-93
Mar-94
Sep-94
Mar-95
TIME PERIOD
ACTUAL

APPENDIX

II

SAMPLE COMPUTER "SCREENS"

FROM

\PLM>SCURVE.WKO

A B C D E F G H

THE "S-CURVE"

A GRAPHIC ANALYSIS
FOR
PROGRAM & PROJECT PERFORMANCE BUDGETING

COMPARING
RATES OF EXPENDITURE vs WORK ACCOMPLISHED
ON THE AGRICULTURAL PLANNING & ANALYSIS (APAP) PROJECT
USAID/SRI LANKA

by
Dr. Kenneth F. Smith
Project Management Consultant
4517 Twinbrook Road, FAIRFAX, Virginia, 22032
USA
Phone: 703-978-1876

JUNE 1991

16-Jun-91 11:15 AM

```
B47: [W12]                                                              MEN
PLAN  UPDATE  GRAPH  SAVE  QUIT
I want to Enter the Planning Data for the Budgetted Rates of Expenditure
        B       C   D       E       F       G       H       I       J       K
47
48              DO YOU WANT TO:
49
50              P  =    PLAN the RATES OF EXPENDITURE
51                      for the PERCENTAGE OF WORK TO BE ACCOMPLISHED
52
53              U  =    UPDATE -- Report the ACTUAL EXPENDITURES
54                      for t.  PERCENTAGE OF WORK ACTUALLY COMPLETED
55
56              G  =    View the S-Curve GRAPH for the current data on file.
57                      [NOTE: To Return and USE THIS MENU after viewing
58                       .      the GRAPH,  Hit: [ESC] [ESC]   [ALT] C  ]
59
60              S  =    SAVE the New Plan or Actual Data Just Entered
61
62              Q  =    Just QUIT without Saving anything
63
64              USE THE ARROW KEYS TO SELECT ONE OF THE MENU OPTIONS ABOVE,
65                                      THEN HIT the [ENTER] KEY;
66              OR:  Type the appropriate corresponding initial letter
16-Jun-91  11:10 AM                          CMD
```

D10: (F0) U [W7] 0 READY

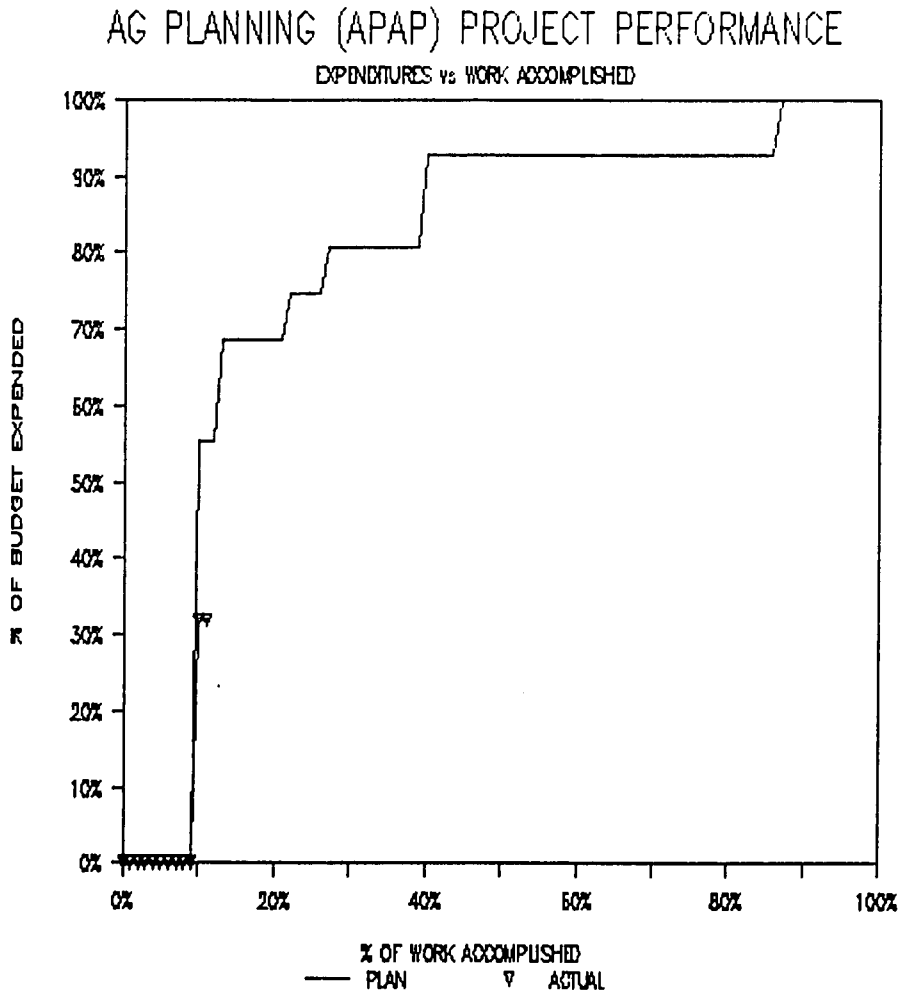
	A	B	C	D	E	F	G	H
		DATA REQUIRED TO PREPARE AN "S-CURVE" GRAPH						
2	PLANNING DATA: For appropriate percentage increments of work planned,							
3	Type the Budget estimated to achieve that level of work.							
4	NOTE: Make data entries with ARROW KEYS only. DO NOT USE [ENTER] KEY							
5	WHEN DATA ENTRY IS FINISHED, HIT: [ENTER] Twice -- i.e. [ENT] [ENT]							
	A	B	C	D	E	F	G	H
6				% of PLANNED WORK ACCOMPLISHED				
7	% of PLANNED WORK ACCOMPLISHED:			0%	1%	2%	3%	4%
8	BUDGET ($000's)		*	===	===	===	===	===
10	ESTIMATED COST:			0	0	0	0	0
11	CUMULATIVE COST:			0	0	0	0	0
12	TOTAL BUDGET = $7,203,000							
13	CUMULATIVE % of Budget:			0	0%	0%	0%	0%
14	---							
15	ACTUAL: Incremental Expenses							
16	since last Cumulative report:		*	0	0	0	0	0
17	CUMULATIVE EXPENSES TO DATE:			0	0	0	0	0
18	TOTAL EXPENDITURES = $2,300,000							
19	CUMULATIVE % Expended:			0%	0%	0%	0%	0%
20								

16-Jun-91 11:11 AM CMD

6: U READY

	A	B	C	D	E	F	G	H
		DATA REQUIRED TO PREPARE AN "S-CURVE" GRAPH						
UPDATING:	Type the EXPENDITURES INCURRED Since the LAST UPDATE							
	UNDER THE APPROPRIATE PERCENTAGE OF WORK ACCOMPLISHED							
NOTE:	Make data entries with ARROW KEYS only. DO NOT USE [ENTER] KEY							
WHEN DATA ENTRY IS FINISHED, HIT:	[ENTER] Twice -- i.e. [ENT] [ENT]							
	A	B		N	O.	P	Q	R
	% of PLANNED WORK ACCOMPLISHED			10%	11%	12%	13%	14%
BUDGET ($000's)				===	===	===	===	===
	ESTIMATED COST:			3,979	0	0	968	0
	CUMULATIVE COST:			3,979	3,979	3,979	4,947	4,947
	TOTAL BUDGET = $7,203,000							
	CUMULATIVE % of Budget:			55%	55%	55%	69%	69%
ACTUAL:	Incremental Expenses							
	since last Cumulative report:			2300	0			
	CUMULATIVE EXPENSES TO DATE:			2300	2300	2300	2300	2300
	TOTAL EXPENDITURES = $2,300,000							
	CUMULATIVE % Expended:			32%	32%	32%	32%	32%

-Jun-91 11:12 AM CMD


AG PLANNING (APAP) PROJECT PERFORMANCE
EXPENDITURES vs WORK ACCOMPLISHED
% OF BUDGET EXPENDED
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0%
20%
40%
60%
80%
100%
% OF WORK ACCOMPLISHED
PLAN
ACTUAL

```
22: [W7]                                                          READY

      L       M       N       O       P       Q       R       S       T       U
 2
 3
 4          MACRO MENU
 5
 6          \M      {GOTO}L24~
 7
 8          \0      {GOTO}A24~{WAIT @NOW+@TIME(0,0,5)}{branch start}
 9          \I
10
11          START   {goto}b47~{menubranch b44}
12
13          \C      {window}/wwc/WTC/WGPD{BRANCH START}
14          CONTINUE
15
16          PLAN    {HOME}{GOTO}A6~/WWH
17                  /WWU{WINDOW}{GOTO}C9~/WTB{GOTO}c10~/WGPE/RIc10.CZ10~
18                  {?}{CONTINUE}
19
20          GRAPHIC/gv
21
16-Jun-91  11:13 AM

60: [W7]                                                          READY

      L       M       N       O       P       Q       R       S       T       U
41
42          UPDATE {HOME}{GOTO}A67~{GOTO}A72~/WWH
43                 /WWU{WINDOW}{GOTO}A6~{GOTO}c9~{GOTO}C16~/wtb
44                 {GOTO}c16~/WGPE/ric16.cz16~
45                 {?}{CONTINUE}
46
47
48
49
50
51
52
53
54
55
56  le.
57
58
59
60
16-Jun-91  11:14 AM
```