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COMPUTER PLAN

(REVISED)

ECONOMIC AND POLICY ANALYSIS PROJECT

Economic Wing, MINFA

Islamabad, Pakistan

Chemonics International Consulting Division

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FOREWORD

The acquisition, use and maintenance of microcomputers has been one of the most difficult and frustrating problems during the first half of the EPA Project. At the beginning of the EPA project, there were only a handful of microcomputers in the Economic Research and Policy analysis directorates. Many economic research and policy analysis activities of the EW were held up because officers did not have access to computers. Even after a few of the computers left from the EAN project were assigned to the EW, the computers were often in a state of disrepair and poorly managed; a printer did not have a ribbon; officers did not have floppy disks to hold their data; the hard disk on a computer was full of old data files and manuscripts that were no longer relevant and there was not room on the hard disk to load the software needed; someone had used a virus infected floppy disk on a computer, destroyed data and software; officers didn't have the necessary software program; someone plugged a 110 voltage computer into a 220 voltage outlet, causing the computer to become inoperative; three EW computers were transferred to another MINFA agency; and some officers did not know how to use lotus 123 or word perfect.

The EW Computer Plan was first issued in December, 1990 and more computers have been provided the EW by the USAID. But most of the above problems remain, and although more officers are effectively using computers via on the job training, the EW must renew efforts to properly manage and maintain the expensive computers now in the EW and to accelerate computer training in the EW.

This computer plan will not solve all of the above and other problems that may occur with the use of microcomputers in the Economic Wing. But when fully implemented, this plan will go far in helping the EW realize the full potential of its limited staff resources in achieving its' ambitious, mission oriented work plan. Further, the EW will provide a showcase of the productive utilization of microcomputer technology in GOP data processing, economic research, and policy analysis.

The different dimensions of this computer plan evolved over the last 16 months as the EPA advisors worked with the economic wing. Draft approaches to different sections were discussed at Heads of Directorates Meetings; a complete draft was prepared; reviewed by each directorate; and finely this plan was agreed to by the Directors. Now we must implement the plan!

A. H. Maan,
Director General

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COMPUTER PLAN

(REVISED)

1.0. SUMMARY

Through the generosity of the USAID and the UNDP/FAO, the Economic Wing now has an adequate number of microcomputer systems to use in providing on the job training for, and gradually independent statistical, economic research and policy analysis in food and agriculture by its professional officers. A slightly larger number of computers will be needed over time as clerical personnel are trained to do routine word processing and other administrative work on microcomputers. And existing computer equipment will gradually need to be replaced as technology advances, machines get obsolete and work demands increase.

The Economic Wing (EW) must maintain and effectively use an adequate complement of microcomputer systems if it is to accomplish its mission of providing accurate, timely and adequate economic intelligence concerning the Pakistan food and fiber system to MINFA, other GOP agencies, and the general public. In a broader sense, the Economic Wing has the opportunity to provide a GOP "showcase" of efficient and highly productive application of "state of the arts" microcomputer applications in government statistical processing, economic research and policy analysis. It already has the beginning of such a capability in its UNDP/FAO funded Agricultural Management Information System (AMIS).

But to fulfill the above need and to realize the broader opportunity, the EW must:

- o Give the disciplined implementation of this computer plan its highest managerial priority.
- o Appoint a responsible and capable EW officer as a full time EW Computer Systems Coordinator, preferably assigned to the Director General's Office with delegated authority and resources to provide working level leadership in the management of the EW computer systems.
- o Provide Maintenance, gradual replacement, improvement and expansion of microcomputer systems in harmony with the its expanding agricultural statistics, economic research, and policy analysis capability.
- o Provide basic and then gradually more advanced formal and on-the-job training of professional and support EW staff in the proper operation, care and maintenance of microcomputer systems and in how to fully exploit

computer software in accomplishing their assigned statistical, economic research, policy analysis, administrative and managerial job responsibilities.

- o Periodically update this Computer Plan to reflect the current computer situation in the EW and to keep the EW on the cutting edge in the application of rapidly changing modern microcomputer technology.
- o Provide adequate, as determined by careful planning and specified in the EW Computer Plan, short term funding provided by the USAID PLA and other donor financing, and then regular GOP budget funding, to fully implement the EW Computer Plan.

2.0. INTRODUCTION

Microcomputer technology can be used very effectively to enhance the productivity of an economic research and policy analysis organization such as the EW. But to be effective, microcomputers must be properly maintained, serviced, and personnel trained in their use. Thus, this Economic Wing Computer Plan has the following objectives:

- o Update the inventory of EW microcomputer systems;
- o Identify changes in the number and type of microcomputer systems the EW needs in order to maximize the productivity of the EW PC 1 allowable staff;
- o Provide a computer management plan that will enable the EW to effectively manage its computer systems; and
- o Identify priority computer training needs of EW staff.

3.0. ASSUMPTIONS

Any plan relating to the intermediate to longer run organization and performance of an organization such as the EW must be based on assumptions about the structure and resource base of the organization. This EW computer plan is based on the following such assumptions:

- o The EW will maintain its basic structure with Agricultural Statistics, Economic Research, and Agricultural Policy directorates and its current mission although the number and purposes of sections within directorates may change.

- o The professional officer strength of the three line directorates of the EW will not significantly exceed its current strength of 39.

4.0. COMPUTER INVENTORY

A computer systems file with the format of Figure 1 has been included in the EW Management Information System. One of these forms is completed for each existing and proposed microcomputer system in the EW. The computer systems file will be routinely updated and used in planning for, and managing EW computer systems.

At present, there are 51 computers in the EW with the organization or project ownership and components as indicated in Table 1. The EW/GOP owns ten computers that were transferred to GOP ownership at the conclusion of the UNDP and USAID sponsored Crop Forecasting and Early Warning System and Economic Analysis Network projects. The current UNDP/FAO sponsored Agricultural Management Information System (AMIS) project has 14 computer systems and the USAID sponsored Economic and Policy Analysis (EPA) Project has 27 computer systems. All of the available computers contain appropriate software for their respective uses although no attempt has been made to maintain an inventory of software.

Tables two through six contain a summary of the section and principal users of each computer, and the type of work each computer is used for within a Directorate, the Office of the Director General and the AMIS and EPA supporting project staffs as of December 23, 1991.

The Directorate of Agricultural Statistics (DAS) and UNDP/FAO AMIS project staff use 18 computers for data assembly, data processing, crop forecasting and development of the Agricultural Management Information System (AMIS) (Table 2). The Directorate of Economic Research (DER) uses 11 computer systems in their commodity situation, agri-business and farm finance research (Table 3). The Directorate of Agricultural Policy (DAP) uses seven computer systems in their input-output analysis, aggregate measure of government support to agriculture, agricultural sector analysis and administrative work (Table 4). The Office of the Director General (ODG) uses four computers for ew administration, book keeping, work processing, and the DG's professional work as indicated in Table 5. And finally, EPA project staff, both short and long term, use 11 computer systems for providing short and long term consulting services to the three directorates of the EW (Table 6). One computer in the DAS and EPA are used to provide the AMIS Local Area Network file server and one EPA computer is used for general laser printing. Further, one of the EPA computers will shortly be transferred to the Secretary's Office, MINFA.

ECONOMIC WING MANAGEMENT INFORMATION SYSTEM

FILE - COMPINVE	DIRECTORY - COMPSYST		
SYSTEM NO.:	DIRECTORATE:	SECTION:	
SOURCE:	DATE ACQUIRED:	OWNERSHIP:	
PRINCIPLE USER:	TYPE OF WORK USED FOR:		
COMPUTER BRAND:	COMPUTER MODEL:		
COMPUTER SERIAL NUMBER:	COMPUTER VOLTAGE:		
MEMORY:	HARD DISK SIZE:	MATH CO-PROCESSOR?:	
NUMBER OF INTERNAL FLOPPY DISK DRIVES:			
NUMBER OF EXTERNAL FLOPPY DISK DRIVES:			
OTHER CARDS OR BOARDS:			

KEYBOARD BRAND:	KEYBOARD MODEL:		
KEYBOARD SERIAL NUMBER:			

MONITOR BRAND:	MONITOR MODEL:		
MONITOR SERIAL NUMBER:			

PRINTER BRAND:	PRINTER MODEL:		
PRINTER SERIAL NUMBER:			PRINTER VOLTAGE:

STABILIZER BRAND:	STABILIZER MODEL:		
STABILIZER VOLTAGE:			

UPS BRAND:	UPS MODEL:		
ELECTRIC BOARD?:	NUMBER OF COMPONENT COVERS:		

COMPONENT SUMMARY:			

MAINTENANCE CONTRACT WITH:			
TELEPHONE NUMBER OF VENDOR:	DATE OF CONTRACT:		
TYPE OF MAINTENANCE CONTRACT (REGULAR OR CALL BASIS):			
DATE COMPUTER WAS LAST SERVICED:			
NUMBER OF TIMES COMPUTER WAS SERVICED DURING THIS CONTRACT PERIOD:			
PARTS REPLACED IN THE COMPUTER SYSTEM:			
COMPUTER BACKUP CAPABILITY:			

COMMENTS:			

Figure 1. The Economic Wing Management Information System Computer System File

Table 1. Computers available to the Economic Wing

No.	Serial No.	Owned by	Component equipment	Dir.
01	89J.20006	UNDP	Two external floppy disk drives, HP laser jet II printer and Auto STAC stabilizer	DAS
02	GA19340	UNDP	One external floppy disk drive, EPSON LQ 1050 printer and electric board	DAS
03	US102137	UNDP	EPSON LQ 1060 printer, Stoval SVC-1000 N Stabilizer and one electric board	DAS
04	90041781	UNDP	Three printers, one stack stabilizer, one UPS and one electric board	DAS
05	BAX56346	UNDP	One stabilizer and one electric board	DAS
06	90035056	UNDP	EPSON LQ-1050 printer, stovol stabilizer and one electric board	DAS
07	90035184	UNDP	EPSON LQ-1060 printer, Stavol stabilizer and one electric board	DAS
08	3DX01538	UNDP	EPSON LQ-1050 printer, Deskjet printer, stabilizer and electric board	DAS
09	BA19342	UNDP	EPSON LQ-1060 printer, Stavol stabilizer, UPS and one electric board	DAS
10	GA-19242	UNDP	EPSON LQ-1060 printer, Stavol stabilizer and one electric board	DAS
11	5170 -7288662	GOP	EPSON LQ-1050 printer, Stavol stabilizer and electric board	DAS
12	90033843	UNDP	EPSON LQ-1050 printer, Stavol stabilizer and electric board	DAS
13	BA17603	UNDP	EPSON LQ-1050 printer, Stavol stabilizer and electric board	DAS

(Continued)

Table 1. Computers available to the Economic Wing (Continued)

No.	Serial No.	Owned by	Component equipment	Dir.
14	BAX56347	UNDP	EPSON LQ-1060 printer, Stavol stabilizer and electric board	DAS
15	DJK68YAST 286	UNDP	EPSON LQ-1050 printer, Stavol stabilizer and electric board	DAS
16	5170BE550 0583314	GOP	IBM proprinter, Stavol stabilizer and electric board	DAS
17	BE550045 071	GOP	IBM proprinter XL, Stavol stabilizer and electric board	DAS
18	116733	GOP		DAS
19	BN-45222	GOP	One UPS and one Utiline II Stabilizer	DAP
20	100-125 VAC	USAID	Two internal floppy disk drives	DAP
21	EBA -04937993	USAID	EPSON FX - 185 printer, Stavol stabilizer and one electric board	DAP
22	124CF0 02663	USAID	Okidata printer and one stabilizer	DAP
23	020370LUB	USAID	HP deskjet printer, stabilizer and electric board	DAP
24	EBA-0493 8056	USAID	Okidata printer, one stabilizer and electric board	DAP
25	EAL-0473 6722	USAID	EPSON FX-185 printer, Aetco stabilizer and one electric board	DER
26	EBA-0493 8083	USAID	EPSON LQ-1000 printer, stabimatic stabilizer and electric board	DER
27	EBT -10820257	USAID	Two disk drives, tape backup and desk jet 500 printer	DER
28	EBA -04836582	USAID	Deskjet 500 printer and Utiline stabilizer	DER

(Continued)

Table 1. Computers available to the Economic Wing (Continued)

No.	Serial No.	Owned by	Component equipment	Dir.
29	124CF00 -2650	USAID	Two disk drives, stabimatic stabilizer and one electric board	DER
30	5170 -7377562	GOP	EPSON FX-185 printer, Stavol stabilizer and electric board	DER
31	EBT -11220009	USAID	Okidata printer, Aetco stabilizer and electric board	DER
32	124CF00 -2653	USAID	Deskjet 500 printer, UPS and electric board	DER
33	124CF00 -2628	USAID	Okidata printer, two internal disk drives, Stavol stabilizer and electric board	DER
34	EBA-0493 -8075	USAID	Okidata printer, utiline stabilizer, one disk drive and electric board	DER
35	EBA-0493 -8025	USAID	Laser jet 500 and Utiline stabilizer	DER
36	124CF00 -2668	USAID	Okidata printer, Stabilmatic stabilizer, two floppy disk drives and electric board	DER
37	EBT-1122 -0098	USAID	EPSON FX-185 printer, Stavol stabilizer and electric board	EPA
38	5098977 -5170	GOP	Tape backup	ODG
39	7288920	GOP	EPSON LQ-1000 printer and Utiline II stabilizer	ODG
40	BN45196	GOP	HP laser jet II printer, two stabilizers and electric board	ODG
41	BN45180	GOP	EPSON LQ-1000 printer, Utiline II stabilizer and electric board	ODG
42	124CF00 -2613	USAID	HP deskjet 500 printer, Stac stabilizer and electric board	EPA

(Continued)

Table 1. Computers available to the Economic Wing (Continued)

No.	Serial No.	Owned by	Component equipment	Dir.
43	-	USAID	EPSON LQ-2550 printer, Stac stabilizer and electric board	EPA
44	-	USAID	HP Laser jet IIID printer, UPS 450 AT and electric board	EPA
45	-	USAID	HP Laser jet IIID printer, UPS 450 AT and electric board	EPA
46	EBA-0483 -5943	USAID	HP Deskjet printer, Actco stabilizer and electric board	EPA
47	EBT-1122 -0023	USAID	EPSON FX-185 and electric board	EPA
48	-	USAID	HP Laser jet IID printer and Aetco stabilizer	EPA
49	OZ03710UB	USAID	External floppy disk	EPA
50	-	USAID	diconex inkjet portable pri	EPA
51	=	USAID	EPSON LQ 2550 printer, voltage regulator and electric board	EPA

Table 2. Computer systems Used by the Directorate of Agricultural Statistics

SYSTEM NO.	SECTION	PRINCIPLE USER	TYPE OF WORK USED FOR
01	DAPF	File Server	File server for AMIS LAN
02	DAPF	Noor Muhammad	Wheat crop forecasting and AMIS development
03	DAPF	Saed A. Shah	AMIS development
04	DAPF	Dr. M. Manuel	AMIS development
05	DAPF	Shahzad Mir	AMIS project records and correspondence
06	DAAS	Muhammad Younas	Data entry and preparing publications
07	DAPF	Yousaf Haleem	Process statistical publications
08	DAPF	Syed T. Ahmed	AMIS Development
09	DAPF	Abdur Rashid	Developing wheat crop forecasts for the Baluchistan Province
10	DAPF	Fayyaz Ahmad	Developing wheat crop forecasts for the Baluchistan Province
11	ODD	Mrs. Nighat Alam	DAS correspondence
12	DAAS	Taj M. Shah	Assembly and processing of agricultural price data and preparing reports
13	DAAS	M. Mujahid Khan	Entering agricultural inputs data and preparing reports
15	DAAS	Mohammad Akram	Processing of crop data
16	DAAS	Muhammed Wasil	Updating of crops data
17	DAAS	M. Aleem	Updating crop data and preparing briefing papers
18	ODD	Sajjad Malik	Processing of Trade data

Table 3. Computer systems Used by the Directorate of Economic Research

SYSTEM NO.	SECTION	PRINCIPLE USER	TYPE OF WORK USED FOR
25	COSI	Natig H. Naqvi	Commodity situation and outlook analysis for wheat, cotton and other major crops
26	COSI	Mubasher Ahmed	Commodity situation and outlook analysis and reporting for major crops
27	COSI	Bashir A. Bhatti	Situation and outlook analysis for wheat, cotton and other major crops
28	AGBU	Khawaja S. Ahmad	Estimation, analysis and reporting of marketing margins and the marketing bill
29	AGBU	Abdul Q. Paracha	Economic research relating to marketing margins and marketing bill
30	AGBU	Abdul Majeed	Data assembly and analysis relating to marketing margins and the marketing bill
31	FAFI	A. Z. Abbassi	Data processing, analysis, and report writing relating to farm income
32	FAFI	S. A. Awan	Data processing, analysis, and report writing relating to farm income
33	FAFI	Habib Ahmad	Data processing and analysis of farm income estimates
34	FAFI	Salim Akhtar	Data processing and analysis relating to farm income
35	ODD	Miss M. A. Hamid	DER administrative work and file processing relating to economic research

Table 4. Computer systems in the Directorate of Agricultural Policy

SYSTEM NO.	SECTION	PRINCIPLE USER	TYPE OF WORK USED FOR
14	DAPF	Mian B. Ahmad	Agricultural policy analysis
19	ODD	Bashir A. Malik	DAP administrative work and agricultural policy analysis
20	AGAN	Sabri A. Shakoor	Input/Output analysis
21	AGAN	Muhammad Nawaz	Agricultural sector modeling and analysis
22	AGAN	Tanveer A. Butt	Agricultural sector modeling and policy analysis
23	FAIP	Shoaib Bashir	Policy analysis relating to farm inputs
24	ODD	Muhammad Ibrar	Analysis of Government subsidies and taxes

Table 5. Computer systems Used by the Office of the Director General

SYSTEM NO.	PRINCIPLE USER	TYPE OF WORK USED FOR
38	Khalid Javed	Administrative accounting
39	Intasar Ahmed	Administrative word processing
40	M. Javed Iqbal	Administrative word processing
41	Dr. A. H. Maan	Administrative and professional work

Table 6. Computer systems used by EPA project staff

SYSTEM NO.	PRINCIPLE USER	TYPE OF WORK USED FOR
36	M. Ijaz	Data assembly, analysis and report writing relating to agricultural inputs, outputs, productivity and agribusiness outputs
37	Mr. Rao Shafiq	Situation and outlook analysis and report writing for minor crops and input/output analysis and report writing
42	Dick McConnen	EPA correspondence, other EPA administrative work and various areas of economic research and policy analysis
43	Riaz Lodhi	EPA administration and budget
44	Abdul Ghaffar	EPA correspondence and other EPA administrative work
46	Secretary's staff	MINFA administrative work
47	General	AMIS LAN
48	TDY Consultants	Commodity situation, marketing margins and marketing bill estimates and farm income estimates and analysis
49	Leroy Quance and TDY consultants	Processing of EPA Project deliverables
50	EPA Consultants	Economic research, policy analysis and trip reports
51	Leroy Quance and	Agricultural sector analysis, AMIS User's Manual, AMIS PC.

5.0. ADDITIONAL COMPUTER SYSTEMS NEEDS

The EW now has an adequate number of computer systems for its professional officer staff. However, as the professional officers become more fully trained in computer use expands to using computers for file work and other EW correspondence and other administrative information processing, the EW clerical staff will be trained to use computers and all written information will be processed on computers. To prepare for this development, the EW will need at least one additional computer in each of the three directorates during the next year.

During the last year, under EPA/AMIS cooperative efforts, the AMIS LAN was established in the DER offices in the 33 Blue Area. As part of this effort to utilize AMIS throughout the EW, more LAN boards, cable and other installation supplies will be required.

Computer systems become obsolete rapidly and eventually the maintenance costs may not justify keeping the older computers, especially in a statistical processing and economic research environment as demanding as the EW. Thus, the EW should plan on replacing approximately ten percent of its computer systems each year. This will enable the EW to gradually upgrade its computer systems and replace machines for which high maintenance costs do not justify keeping them on line. However, in many cases, the older machines that are replaced could be reconditioned and transferred to less demanding computer needs in MINFA and other GOP and Provincial agencies, who as outlined below need computers to enhance the efficiency of the broader agricultural information system of which the EW is a part.

5.1. The Broader Agricultural Information System

There are many federal and provincial level institutions that support the EW by supplying primary data; use AMIS data and other outputs of the EW; and in other ways contribute to the GOP food and agricultural information system of which the EW is a part. And almost all of these organizations are very limited in the availability of modern, data processing technology. All such agencies could use additional micro-computers very effectively.

EAN, the predecessor project to EPA, had an objective of providing micro-computers to other organizations. However, EPA is a much smaller project than EAN and its objectives do not include the provision of micro-computers beyond the EW. Further, if EAN is to succeed in its objective of producing an institutionalized capability to provide the MINFA and other GOP agencies with accurate, relevant, timely, and adequate economic intelligence on food and agricultural policy, the limited number of computers provided the EW must be retained and maintained by the EW.

However, as indicated above, the EW needs to maintain "state of the arts" , generally large capacity computers with math co-processors and large RAM. Often, other GOP organizations in the GOP require basic word processing capability with some Lotus 123 type of spreadsheet or data base software. Thus, as the EW acquires additional, more advanced computers, some of the older computers could be reconditioned and provided to other MINFA and provincial organizations.

One additional computer need during 1992 is a 386 or 486 computer with a large hard disk that can be provided to the Punjab Province as part of the EW AMIS-PC activity. This activity will develop a micro-computer based version of the AMIS. AMIS PC will allow the will allow Provincial statistical units and other suppliers of basic data to more efficiently use the analytical content and National coverage provided by the EW. Following the successful development of AMIS PC, provisions will need to be developed for other users of EW data and other economic intelligence on food and agriculture to have access to AMIS PC.

Appendix I contains a list of organizations in the broader agricultural data network that very much need, and the rationale and benefits to be derived from providing, micro-computers.

6.0. COMPUTER SYSTEMS MANAGEMENT

Microcomputer technology can be used very effectively to enhance the productivity of an economic research and policy analysis organization such as the EW. But to be effective, microcomputers must be properly maintained, serviced, and personnel trained in their use. EW computer management includes the following components:

6.1. Computer Systems Coordinator

One senior officer in the EW will be designated the EW Computer Coordinator (CC). And depending on the office facilities available to the EW, one or two additional officers will be assigned to assist the CC. The Computer Coordinator and his assistant(s) will:

- o Maintain a current inventory of EW Computer systems using the EW Management Information System Computer File (Figure 1).
- o Insure that all EW Computers and major peripherals are under a standard maintenance and service contract with a reputable computer service firm.
- o Cooperate with EW Administration, in maintaining and

dispersing, upon receipt of a properly completed EW Request for Computer Supplies and Services (Appendix III), expendable computer supplies such as floppy disks, printer paper, and printer ribbons.

- o Cooperate with EW Administration in contacting an appropriate computer service firm to arrange and supervise the repair and or maintenance of EW computers, upon receipt of a properly completed EW request for Computer Supplies.
- o Plan and coordinate the computer training for EW professional staff.
- o As an integral part of the EW annual program planning, update and or revise the EW Computer Plan with input from the EW Directorates and approval of the DG.
- o Provide a quarterly report to the DG on the status of EW computer systems and EW Staff computer skills and training and review this report at a Quarterly Meeting of the Heads of the Directorates.

6.2. Disciplined Responsibility

If the EW is to effectively maintain, use and improve its computer systems, individuals at every level of the EW must assume appropriate responsibility:

- o Primary Users of each computer system must diligently learn and apply the proper skills and practices to maintain and use the computer effectively. This includes keeping the computer clean by shutting it off after use each day, dusting it off with a soft cloth, and covering it with the plastic dust covers provided; backing up data files as instructed, and aggressively pursuing training opportunities to acquire those computer skills required of their job; and cooperating with the Deputy Directors and Computer Coordinator to maintain the computer in proper working order and to conserve expensive computer supplies.
- o Deputy Directors must assume line leadership responsibility for insuring that computers in their sections are properly maintained and used. They should periodically check to insure that computer users are using good computer procedures, backing up their data bases as appropriate, and receiving the computer training they need to effectively accomplish their jobs.

- o Directors must provide Directorate level leadership in knowing the operational status of computers in their directorate, know and promote the computer skills status of their officers and clerks, and become computer users themselves so that they set good examples for their staff and add to the efficient processing of information in the EW.
- o The Director General Must set the overall attitude regarding computer use in the EW by: giving the establishment and effective use of modern computer technology the highest possible priority; looking upon the activities of the CC and Assistant CC as essential functions in the EW, insuring that the CC position is filled by a capable and hard working professional officer, and supporting the CC in fulfilling his responsibilities; insuring that adequate funds are available to maintain the EW computer systems, and periodically conduct personal checks to insure that EW computer systems are in good repair, are properly used and that EW staff have adequate training in necessary computer skills; and learning to effectively use computers at the executive level.

7.0. COMPUTER TRAINING

Computer training will be one of the most important and most general types of training provided under the EPA Project. Outlined more fully under the forthcoming EW Training Plan, it will generally be of three types:

1.) Basic training in such computer operation as DOS, Lotus 123, Word Perfect, Quatro-Pro, and AMIS LAN operations will be provided all professional officers of the EW through self taught computerized training programs and short courses.

The CC will maintain copies of, and sign out to EW staff, **computerized training courses** in such programs as Wordperfect, Lotus 123, and D-Base III. The Computer Coordinator will devise means to monitor the EW staffs' completion of such training programs on a self taught basis.

Short courses in AMIS and LAN operations will be periodically scheduled by the Data Processing and Forecasting Section of DAS.

2.) **Intermediate to advanced training** in spreadsheet and computer graphics operations will be provided through a combination of short courses and on the job training with the assistance of EPA funded specialized training personnel.

3.) **Specialized training in specific applications** of the above and other such computer programs in statistical processing and data forecasting, economic research, and policy analysis will be emphasized in all subject matter technical assistance activities.

One computer training activity designed for review and reinforcement of computer skills be A **Computer Bytes** activity. The CC will plan, coordinate, monitor, and report on the accomplishments of this activity in which individual EW officers and consultants prepare and present a very brief 30 minute presentation on a single computer technique. Such a Computer Byte will be presented once each week, to be scheduled by the CC, at the 33 Blue office location and on the 9th floor of the Shaheed-e-Millat building. The person presenting each Computer Byte will prepare a one page summary handout on the topic covered.

4.) Intermediate level **computer maintenance training** for the CC and his assistant(s).

To facilitate the planning, scheduling and conduct of computer training, the EW Training Plan, now under preparation with the use of a training file according to the format in Appendix II, will specify the type and level of computer skills required of each EW professional officer position and the computer skills levels held by the position incumbent.

8.0. PROPOSAL FOR DONOR FUNDED COMPUTERS

USAID and the UNDP/FAO have been very generous in providing the EW and other agricultural organizations in MINFA and across Pakistan micro-computers. And The UNDP/FAO funded AMIS project and the USAID funded EPA project are cooperating to insure a continuing, integrated effort to enhance and institutionalized the application of modern computer technology in the EW.

To further enhance the EW effectiveness and to contribute to the further application of micro-computer technology in the Pakistan food and agricultural information system, it is recommended that The UNDP/FAO and or the USAID provide the EW with seven additional micro-computers during 1992. Such computers should be of a 386 or 486 configuration with math co-processors, 4 to 6 mb ram and 60 to 80 mb hard disks.

One such computer will be transferred to the appropriate organization of the Punjab Provincial government for implementing the AMIS PC activity. The other six new computers will be used to replace existing EW computers that require state of the arts micro-computer technology. Of the six current EW computers thus replaced, three will be used by EW clerks as they acquire word processing and spreadsheet skills and three will be transferred to

other MINFA or provincial agencies requiring computers.

It is further recommended that USAID/ARD provide the EW Coordinator for Computer Systems and his assistant specialized, short term training in microcomputer systems management and maintenance.

For its part, the EW will give high priority to implementing the computer training needs assessment as part of the EW Training Plan, the computer systems management plan outlined in this computer plan, and the computer training activities outlined above to fill the needs identified in the training plan.

In addition, the EW will develop and submit to the appropriate GOP budget offices, an annual budget request sufficient to maintain and gradually upgrade an adequate configuration of micro-computer systems for the EW.

APPENDIX I

COMPUTER NEEDS OF AGENCIES SUPPLYING THE EW
WITH AGRICULTURAL DATA



Telex No. 5844 MINEA PK

Telegram : DAGES

D. O. No. **EW-DAS(1)/90**

Government of Pakistan

Ministry of Food, Agriculture and Co-operative
(Planning Unit)

Shaheed-e-Millat Sectt.

9th Floor, Blue Area,

Islamabad, the... **27th Feb., ...19 91**

**FROM: MR. S.M. ASLAM JAFRI
AGRICULTURE STATISTICS**

Subject: Request for Computer Systems.

Dear Dr Leroy,

Kindly refer to Agenda Item No.6 of the Minutes of the meeting of Heads of Directorates of the Economic Wing held on 13th December 1990.

Institutions, both at federal and provincial levels that support the Economic Wing in terms of its data and information needs, either have or do not have computer facilities to handle and report on data. These agencies that do have computing facilities may already have attained certain levels of computing capabilities utilizing their own limited number of microcomputer systems. Providing additional computers would certainly assist these agencies in expanding applications and broadening the personnel resource base to handle and manage data. Agencies that do not have any computer facilities would certainly benefit from the introduction of these equipment. Through intensive training in the uses and applications of those computer systems, the institutions' capabilities to manage, process, analyze and report on data would be strengthened and improved.

The computer systems would be used, among others to:

- i. Report timely and relevant agricultural data, and avoiding the transmission of excessively detailed information to top management levels.
- ii. Facilitate the transmission and exchange of data through the use of standard storage media (i.e diskettes, cassette tapes etc.) between users and producers of information.
- iii. Improve and enhance the data collection/assembly, processing analysis, and reporting capabilities in order to increase the efficiency and timeliness of information activities and the accuracy and consistency of information generated.

Cont'd...Page-2

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- iv. Promote sharing of information and computer know-how due to limited computer resource and capable personnel, establish a regular flow of source data; avoid unnecessary delays in data dissemination.
- v. etc.

I would like to request that EPA Project provide computer systems to each of the institutions indicated on the attached list.



DIRECTOR

Dr. Leroy Quance
Advisor USAID
EPA Project
ISLAMABAD

LIST OF AGENCIES

- | | |
|--|--|
| 1. Joint Secretary(Agri.)
M/O Food and Agriculture
Islamabad | 11. Director,
Crop Reporting Services
Government of Punjab, Lahore |
| 2. Joint Secretary(Food)
M/O Food and Agriculture
Islamabad. | 12. Joint Director
Agriculture Statistics
Government of Sindh, Hyderabad |
| 3. Irrigation Department
Government of Punjab
Lahore. | 13. Director
Crop Reporting Services
Govt. of NWFP, Peshawar. |
| 4. Irrigation Department
Government of Sindh
Karachi. | 14. Statistician
Agriculture Department
Govt. of Balochistan, Quetta |
| 5. PASSCO, Lahore | 15. ALMA, Karachi |
| 6. Director
Food Department,
Govt. of Sindh, Karachi. | 16. I.G. Forest
for Forestry Data,
Islamabad |
| 7. Director
Food Department
Govt. of Punjab, Lahore | 17. D.G
Fisheries
Karachi. |
| 8. Fertilizer Import
Directorate, Lahore | 18. Punjab Agril. Supplies
Corporation, Lahore |
| 9. Director,
Land Records, Lahore | 19. SASO
Karachi. |
| 10. Director
Land Record, Hyderabad. | |

APPENDIX II

EW TRAINING PLAN SKILLS INVENTORY FILE FORMAT

FILE - JOBSKILS

DIRECTORY - C;\FIRSTCHO\EWINGMIS

I. IDENTIFICATION

NAME:

DIRECTORATE:

SECTION:

POSITION TITLE:

II. SUMMARY JOB DESCRIPTION

III. TRAINING BACKGROUND

DEGREE TRAINING:

OTHER FORMAL TRAINING (SHORT COURSES ETC.):

IV. TRAINING INVENTORY

DES -- HBY - Held by incumbent; FPL - Needed for full job performance;
ITN - Incumbent training need.

-- BAS - Basic level; INT - Intermediate level; SPC - Special level

BASIC DATA CONCEPTS (BDC)	-BDC-FPL:	BDC-HBI:	BDC-ITN:
---------------------------	-----------	----------	----------

I. STATISTICAL ANALYSIS (STA)	-STA-FPL:	STA-HBI:	STA-ITN:
-------------------------------	-----------	----------	----------

II. ECONOMIC THEORY

A. FIRM (ETF)	-ETF-FPL:	ETF-HBI:	ETF-ITN:
---------------	-----------	----------	----------

B. SECTOR ANALYSIS (ESA)	-ESA-FPL:	ESA-HBI:	ESA-ITN:
--------------------------	-----------	----------	----------

C. PROD. ECON. CONCEPTS (PEC)	-PEC-FPL:	PEC-HBI:	PEC-ITN:
-------------------------------	-----------	----------	----------

D. MARKET. ECON. CONCEPTS (MEC)	-MEC-FPL:	MEC-HBI:	MEC-ITN:
---------------------------------	-----------	----------	----------

E. INTERNAT. TRADE CONCEPTS (ITC)	-ITC-FPL:	ITC-HBI:	ITC-ITN:
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V. ANALYTICAL TOOLS

A. ENTERPRISE COSTS & RET. (ECR)	-ECR-FPL:	ECR-HBI:	ECR-ITN:
----------------------------------	-----------	----------	----------

B. LINEAR PROG.--FARM LEVEL (LFL)	-LFL-FPL:	LFL-HBI:	LFL-ITN:
-----------------------------------	-----------	----------	----------

-SECTOR LEVEL (LSL)	-LSL-FPL:	LSL-HBI:	LSL-ITN:
---------------------	-----------	----------	----------

C. INPUT/OUTPUT ANALYSIS (IOA)	-IOA-FPL:	IOA-HBI:	IOA-ITN:
--------------------------------	-----------	----------	----------

V. RESEARCH METHODOLOGY (REM)	-REM-FPL:	REM-HBI:	REM-ITN:
-------------------------------	-----------	----------	----------

I. AGRI. POLICY ANALYSIS (APA)	-APA-FPL:	APA-HBI:	APA-ITN:
--------------------------------	-----------	----------	----------

I. COMMUNICATION SKILLS

A. WRITING (CSW)	-CSW-FPL:	CSW-HBI:	CSW-ITN:
------------------	-----------	----------	----------

B. ORAL PRESENTATIONS (CSO)	-CSO-FPL:	CSO-HBI:	CSO-ITN:
-----------------------------	-----------	----------	----------

I. COMPUTER SKILLS

A. WORD PERFECT (CWP)	-CWP-FPL:	CWP-HBI:	CWP-ITN:
-----------------------	-----------	----------	----------

B. LOTUS 123 (123)	-123-FPL:	123-HBI:	123-ITN:
--------------------	-----------	----------	----------

C. D-BASE (CDB)	-CDB-FPL:	CDB-HBI:	CDB-ITN:
-----------------	-----------	----------	----------

D. OTHER (OCS) (SPECIFY):	-OCS-FPL:	OCS-HBI:	OCS-ITN:
---------------------------	-----------	----------	----------

X. MANAGEMENT SKILL (MSK)	-MSK-FPL:	MSK-HBI:	MSK-ITN:
---------------------------	-----------	----------	----------

X. HAS THE INCUMBENT PASSED THE "TOFLE" ENGLISH LANGUAGE TEST:

V. COMMENTS

COMMENTS:

25

APPENDIX III

EW FORM FOR REQUESTING COMPUTER SUPPLIES AND SERVICES

THE ADMIN. OFFICER,
ASSP/EPA PROJECT
ISLAMABAD

SUBJECT: STATIONARY INDENT ----- MONTH -----1992

The following stationary item(s) may please be supplied:

<u>S.NO.</u>	<u>I T E M S</u>	<u>QUANTITY</u>
	1. <u>ELECTRIC TYPEWRITER:</u>	
1.1	Ribbon	
1.2	Tape-off	
1.3	Typing Paper	
	2. <u>COMPUTERS</u>	
2.1	Computer Ribbon	
2.2	Diskettes	
2.3	Computer Paper	
	3. <u>PHOTOCOPIER:</u>	
3.1	Toner	
3.2	Paper	

INDENTOR

SIGNATURE OF DIRECTOR

Dated: _____

Received the above items.

PD-NEI 755

95112

ECONOMIC WING COMPUTER PLAN

Economic and Policy Analysis Project

Economic Wing

**Ministry of Food, Agriculture and Cooperatives
Islamabad, Pakistan**

Chemonics International Consulting Division

USAID Contract No. 391-0492-C-00-0831-00

**EPA Deliverable
No. 91.13.01
May 23, 1991**

FOREWORD

The acquisition, use and maintenance of microcomputers has been one of the most difficult and frustrating problems during the first six months of the EPA Project. Many economic research and policy analysis activities of the EW were held up because officers did not have access to computers; the computers they had access to were in a state of disrepair; a printer did not have a ribbon; some officers did not have floppy disks to store their data; the hard disk on a computer was full of old data files and manuscripts that were no longer relevant and there was not room on the hard disk to load the software needed; someone had used a virus infected floppy disk on a computer, destroyed data and software; some officers didn't have the necessary software program; someone plugged a 110 voltage computer into a 220 voltage outlet, causing the computer to become inoperative; three EW computers were transferred to another MINFA agency, disrupting some high priority work; and some officer do not know how to use lotus 123 or word perfect.

Implementing this computer plan will not solve all recurrences of the above and other problems that may occur with the use of microcomputers in the Economic Wing. But if fully implemented, this computer plan will go far in helping the EW exploit microcomputer technology in maximizing the productivity of its limited staff resources in achieving its ambitious, mission oriented work plan.

The different dimensions of this computer plan evolved over the last few months as the EPA advisors worked with the economic wing. Draft approaches to different sections were discussed at Heads of Directorates Meetings; a complete draft was prepared; reviewed by each directorate; discussed at a Heads of Directorates meeting; and finally this plan was agreed to by the Directors and Director General.

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ECONOMIC WING COMPUTER PLAN

1.0. INTRODUCTION

Objectives of this Economic Wing Computer Plan are to:

- o Inventory the existing EW microcomputer systems;
- o Determine the number and type of microcomputer systems the EW would need in order to maximize the productivity of the EW PC 1 allowable staff;
- o Provide a computer management plan that will enable the EW to effectively manage its computer systems; and
- o Present a proposal for USAID funding consideration for bringing the quantity and composition of EW microcomputer systems from its current status to its maximum staff productivity level.

2.0. ASSUMPTIONS

Any plan relating to the intermediate to longer run organization and performance of an organization such as the EW must be based on assumptions about the structure and staff resource base of the organization. This EW computer plan is based on the following such assumptions:

- o The EW will maintain its basic organizational structure with an Agricultural Statistics, Economic Research, and Agricultural Policy directorates and its current mission although the number and purposes of sections within directorates may undergo minor change.
- o The professional officer strength of the three line directorates of the EW will not significantly exceed its current strength, including two vacancies and the eight EW officers now in the Quaid-E-Azam University nine month training program who do not have a specific EW Assignment;
- o The ten computers and five printers used by the Quaid-E-Azam University training program will not be returned to the EW but will either remain at the University or be used to satisfy non-EW priority MINFA computer needs.
- o The five computers and printers purchased for the EPA project, when turned over to the EW in June, 1993, will

be used to replace older computers or to meet unanticipated needs but will not be available to satisfy any of the computer needs addressed in this plan plan.

- o The UNDP/FAO Agricultural Management Information System (AMIS) project will transfer, upon its termination in June, 1991, its computers that are now being used by the AMIS project or by DAS staff, to the EW for permanent use by the Directorate of Agricultural Statistics (DAS).
- o No existing or planned EW computer system designated in this computer plan will be transferred by the GOP, UNDP/FAO or USAID from the EW to any organizations outside the EW.

3.0. INVENTORY OF ECONOMIC WING COMPUTERS

A computer systems file with the format of Figure 1 has been included in the EW Management Information System. One of these forms is completed for each existing and planned microcomputer system in the EW. The computer systems file will be routinely updated and used in planning and managing EW computer systems.

Table 1 contains an inventory of Economic Wing computers as of April 21, 1991, including those of the UNDP/FAO Agricultural Management Information System (AMIS) project. As indicated above, it is assumed that the AMIS project computers will be turned over to the EW in June, 1991 and will satisfy the computer needs of the Directorate of Agricultural Statistics (DAS) through June 30, 1993.

At present, there are 23 computers in the EW. The 13 AMIS Project computers used by the DAS are used to develop AMIS programs and for data assembly, processing and forecasting. Three computers each are used by the DAP and the DER, and four by the ODG. Of the three DAP computers, one is used to estimate and analyze producer and consumers subsidy equivalents; another for developing work plans, job descriptions, training plans, and keeping a policy log; and the third is used for the professional work and correspondence of the Director.

Two computers in the DER are used for estimating and analyzing Pakistan farm income from data collected under the EAN project and one is used for agribusiness work.

The four computers in the ODG are being used for administrative work, laser printing, and professional work and correspondence of the DG.

ECONOMIC WING MANAGEMENT INFORMATION SYSTEM

FILE -- COMPSYST.FOL

DIRECTORY -ECONWING

I. IDENTIFICATION

COMPUTER SYSTEM NO:

DIRECTORATE:

SECTION:

EXISTING OR PLANNED SYSTEM:

PRINCIPAL USER:

LOCATION OF THE SYSTEM:

WORK PERFORMED OR TO BE PERFORMED ON THE SYSTEM:

DATA BASES STORED OR TO BE STORED IN THE SYSTEM:

II. COMPUTER

COMPUTER - BRAND:

MODEL(C): VOLTAGE:

SERIAL NO.:

SOURCE(C):

DATE ACQUIRED(C):

MEMORY:

HARD DISK:

MATH CO-PROCESSOR:

OTHER SPECIAL BOARDS:

AMIS LOCAL AREA NETWORK:

MAINTENANCE CONTRACT:

DATE LAST SERVICED:

III. PERIPHERALS

PERIPHERALS:

IV. SOFTWARE

SOFTWARE:

V. OTHER INFORMATION

COMMENTS:

Figure 1. The Economic Wing Management Information System
Computer Systems File

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Table 1. Existing Computer Systems in the Economic Wing

Serial No.	Peripherals	Directorate	Work Used for
	Monitor, Quadchrome, CGA (7150105); Printer, Epson, FX 185, 110 Volts (05001358); Uninterruptible Power Supply, Utiline; Uninterruptible Power Supply, Stoval; Internal Tape Drive.	DER	Farm income estimates and analysis, and report writing.
	Monitor: Printer: Voltage Stabilizer:	Off. of DG	Administrative record keeping, budgeting, work plans.
3DX01538	Monitor: Evervision, EGA - 3UM17717 Printers: Epson LQ1050 - 22016381 DeskJet Plus - 3011S10274 Scanner: HP - 2736J05208; Voltage Stabilizer: Staval UPS AROS	DAS	AMIS Program Development, Analysis
51299715170	Monitor: Amdk, CGA - Y5D002510; Printer: Epson, FX185, 110 Volts - 03003639; External Tape Drive: Tecmar - C478524045-A17	Off. of DG	TDY's work
5170-7288531	Monitor, Quadram, CGA (7150096); Printer, Epson, LQ 1000 (19049961); Voltage Stabilizer, Utiline.	DAP	Producer and consumer subsidy equivalents, Policy analysis and manuscripts.
5170-7288662	Monitor, Quadram, CGA (7150090); Printer, Epson, LQ 1050 (22016596).	DAP	Work plans, job descriptions, Policy log, training plan.
5170-7288920	Monitor, Quadram, EGA (7150079); Printer, Epson (03003636); Transformer, Stepdown.	DER	Agribusiness activities
89J.20006	Monitor: ALR, EGA - 02928022064 Printers: Epson LQ1060 - 07T0005391 HP LaserJet Series II - GJ518300 UPS: AROS Staval Voltage Stabilizer	DAS	File Server
90033843	Monitor: ALR, VGA - 06007022038 Printer: Epson LQ1050 - 22027865 Voltage Stabilizer: Staval	DAS	Data Entry, Analysis
90035056	Monitor: ALR, VGA - 06007022010 Printer: Epson LQ1050 - 22016522 Voltage Stabilizer: Staval	DAS	Word Processing, Data Entry

(Continued)

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Table 1. Existing Computer Systems in the Economic Wing (Continued)

Serial No.	Peripherals	Directorate	Work Used for
0035184	Monitor: ALR, VGA - 07027045861 Printer: Epson LQ1050 - OFL002437 UPS: AROS 500 VA Voltage Stabilizer: Stavol	DAS	Data Entry, Analysis
90041781	Monitor: ALR VGA - 07027045594; Printers: Epson LQ1050 - 07T0008337; HP Paint Jet XL - 2934A09868; Voltage Stabilizer: Stac; UPS: AROS Sentinall II	DAS	Statistical Analysis
BA19342	Monitor: Evervision, EGA - KB6063893 Printer: Epson Lq-1050 - OFL0011131 Voltage Stabilizer: Stavol	DAS	AMIS Program Development, Analysis, and Data Forecasting
BAX56346	Monitor: Evervision, EGA - 3WN2334 Printers: Epson LQ1060 - 07T0009102 HP Laserjet IIP - 3003JE04W0 Stabilizer: Stavol, modsel 5VC - 2000; Three way T-Switch	DAS	Word Processing, Budgets
BAX56347	Monitor: Evervision, EGA - 3WN23199 Printer: Epson LQ1050 - 22016549 UPS: AROS 500VA Voltage Stabilizer: Stavol	DAS	Data Entry, Analysis
BN45196	Monitor, Evervision, CGA (3WN00909); Printer, Epson, LQ 1000 (19049283); Voltage Stabilizer, Utiline; Power strip.	Off. of DG	Executive Correspondence
DJK68YAST286	Monitor: AST, EGA - 041744 Printer: Epson LQ1050 - 22016521 UPS: AROS 500VA Voltage Stabilizer: Stavol	DAS	Data Entry, Analysis
EN45191	Monitor, Evervision (3WN00690); Printer, Epson, FX 185 (03003641); Voltage Stabilizer, Utiline; Voltage Stabilizer, Stavol; External Tape Drive.	DER	Farm income estimates, analysis, and research report writing.
EN45222	Monitor, Evervision, EGA (3WN01007), Printer, Epson, LQ 1000 (19050143), Voltage Stabilizer, Utiline.	DAP	Director's professional work and preparation of Policy manuscripts, work plans and budget.

(Continued)

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Table 1. Existing Computer Systems in the Economic Wing (Continued)

Serial No.	Peripherals	Directorate	Work Used for
GA-19242	Monitor: Evervision, EGA - 2WN07408 Printer: LQ1050 - 07T0009101 Voltage Stabilizer: Staval	DAS	AMIS Program Development, Analysis, Data Forecasting
GA19340	Monitor: Evervision, EGA - 3WN17783 Printer: Epson LQ1050 - 22027866 Voltage Stabilizer, Staval	DAS	AMIS development and statistical analysis
US102137	Monitor: AST, EGR - 041490 Voltage Stabilizer, Staval	DAS	AMIS Program Development
Y0989775170	Monitor, Quadchrome, CGA (5020006); Printer, HP, Laser Jet, 110 volts (2718J99970); Voltage Regulator, Staval 500); Voltage Regulator, Staval 1000); External Tape Drive, Tecmar (C478524006-A17).	Off. of DG	Desktop publishing, laser printing.

All of the current computers in the EW have a reasonable complement of peripherals as indicated in Table 1 and contain appropriate software for their respective uses.

4.0. EW COMPUTER SYSTEMS NEEDS

Tables 2, 3, 4, and 5 list the full complement of microcomputer systems needed for the Office of the Director General (ODG) and the three directorates of Agricultural Policy (DAP), Agricultural Statistics (DAS), and Economic Research (DER) to maximize the productivity of their authorized personnel in accomplishing their ambitious work plan through June, 1993.

The Office of the Director General will use four computers for executive correspondence, desktop publishing, laser printing, personnel, administration, and budgeting. And one computer will be maintained in the ODG for use by consultants.

Three computers will provide the DAP, DER and ODG access to the AMIS local area network for accessing data; and two will provide the DAP and DER desktop publishing and laser printing capabilities.

Three computers will be used by the Directorates for managerial and administrative activities such as the work plan and budget development and monitoring, job descriptions, policy log, computer plan, and training plan.

Of the DAP's remaining six computers, two would be used for the analysis of fertilizer, credit, and other farm input policies, two will provide for the analysis of farm structure, producer and consumer subsidies and other farm sector analytical capability such as the Pakistan Agricultural Sector Model (PASM); and two computers will be used for food and fiber system aggregate analysis such as productivity indexes and macro-economic analysis reports and policy briefs.

The DER requires 11 computers. In addition to the two computers mentioned above for access to the AMIS network, desktop publishing, laser printing and administrative work in the director's office; four computers will be used in the commodity situation and outlook program; three in the farm income work; and two for calculating and analyzing marketing margins, marketing bill estimates and analysis, and I/O model development and use.

Of the 15 computers to be utilized by the Agricultural Statistics Directorate, 13 are existing systems provided by the AMIS project for program development, data assembly, processing and forecasting. The only two additional computers anticipated for the DAS are for managerial and administrative work mentioned above and one is for programmed computer applications training.

**Table 2. Computer Systems Necessary for the Office of the Director General
to Obtain Full Staff Productivity**

No.	Existing or Planned	Directorate	Principal User	Work to be Performed
DG-01	Existing	Off. of DG	A. H. Maan	Executive Correspondence
DG-02	Existing	Off. of DG	M. J. Javed	Desktop publishing, laser printing.
DG-03	Existing	Off. of DG	Admin. Pers.	Administrative record keeping, budgeting, work plans.
DG-04	Planned	Off. of DG	ODG Staff	Retrieve AMIS data.
DG-05	Existing	Off. of DG	Consultants	Consultants work

Table 3. Computer Systems Necessary for the Directorate of Agricultural Policy to Obtain Full Staff Productivity

No.	Existing or Planned	Directorate	Section	Principal User	Work to be Performed
DAP-01	Existing	DAP	Dir. Off.	B. A. Malik	Director's professional work and preparation of Policy manuscripts, workplans and budget.
DAP-02	Planned	DAP	Dir. Off.	DAP Staff	Access AMIS and laser printing.
DAP-03	Planned	DAP	FAIN	S. H. Malik	Assembly, storage and analysis of fertilizer and other farm input data.
DAP-04	Planned	DAP	FAIN	R. Burki	Assembly, storage and analysis of credit and other farm input data and policy issues.
DAP-05	Existing	DAP	FAPR	M. Ibrar	Producer and consumer subsidy equivalents, Policy analysis and manuscripts.
DAP-06	Planned	DAP	FAPR	K. Mohammad	Analysis of structural adjustments, supply response, and Policy issues within the farm production sector.
DAP-07	Planned	DAP	AGAN	Y. Halcom	Macro-agricultural economic analysis, analytical reports and policy briefs.
DAP-08	Existing	DAP	AGAN	Nighat Alam	Work plans, job descriptions, Policy log, training plan.

Table 4. Computer Systems Necessary for the Directorate of Economic Research to Obtain Full Staff Productivity

No.	Existing or Planned	Directorate	Section	Principal User	Work to be Performed
DER-01	Planned	DER	Dir. Off.	N. Hussain	Director's professional work, economic research reports, policy briefs, work plans and budget.
DER-02	Planned	DER	Dir. Off.	DER Staff	Retrieval of AMIS data, laserprinting, maintenance of policy log.
DER-03	Planned	DER	COSI	B. A. Bhatti	Commodity situation and outlook reports for wheat.
DER-04	Planned	DER	COSI	N. H. Naqvi	Situation and outlook reports for rice and other major crops.
DER-05	Planned	DER	COSI	TBD	Situation and outlook reports for minor crops.
DER-06	Planned	DER	COSI	TBD	Situation and outlook reports for livestock.
DER-07	Existing	DER	FAFI	H. Ahmad	Farm income estimates, analysis, and research report writing.
DER-08	Planned	DER	FAFI	A. Abbasi	Estimation and analysis of farm income, and research report writing.
DER-09	Existing	DER	FAFI	S. A. Awan	Farm income estimates and analysis, and report writing.
DER-10	Existing	DER	AGBU	A. S. Ahmad	I/O Model documentation, updating and use.
DER-11	Planned	DER	AGBU	A. Q. Piracha	Calculation and analysis of marketing margins and marketing bill estimates.

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Table 5. Computer Systems Necessary for the Directorate of Agricultural Statistics to Obtain Full Staff Productivity

No.	Existing or Planned	Directorate	Section	Principal User	Work to be Performed
DAS-01	Existing	DAS		M. M. Manuel Jr.	Statistical Analysis.
DAS-02	Existing	DAS	DAFO	Noor Muhammad	AMIS development and statistical analysis.
DAS-03	Existing	DAS		Syed Ahmed Shah	AMIS Program Development.
DAS-04	Existing	DAS		Shahzad Mir	Word Processing, budgets
DAS-05	Existing	DAS		-	File Server.
DAS-06	Existing	DAS		Common	Word P processing, Data Entry.
DAS-07	Existing	DAS		Abdur Rashid	AMIS program development, data Analysis and forecasting.
DAS-08	Existing	DAS	DAFO	Fayyaz Nauman	AMIS Program Development, data analysis, and forecasting.
DAS-09	Existing	DAS		Saed Tariq Ahmad	AMIS program development and data analysis.
DAS-10	Existing	DAS	DAAC	Aleem Khan	Data Entry and Analysis.
DAS-11	Existing	DAS	DAAS	Muhammad Akram	Data Entry and Analysis.
DAS-12	Existing	DAS	DAAS	Mian Bashir	Data Entry and analysis.
DAS-13	Existing	DAS	DAPR	Taj Shah	Data Entry and analysis.
DAS-14	Planned	DAS	-	DAS Staff	Directorate management and administration.
DAS-15	Planned	DAS	-	Trainees	Computer Training.

The above computer needs are summarized in table 6 by Economic Wing unit as existing or planned systems. An additional 16 computers are required to provide computer systems capability enabling the Economic Wing to reach its maximum staff capability.

Fifteen of the additional 16 planned computer systems should be a 286, and preferably a 386 generation IBM compatible computer utilizing 220 voltage electrical current with math co-processor and 40 to 80 megabyte hard disks. One additional computer should be a 486 generation for developing and using the Pakistan Agricultural Sector Model (PASM). Each system should include a CGA color monitor, voltage stabilizer and power strip. If the computers require 110 volts current, an appropriate transformer will be required. Eleven of the systems should include an Epson type of dot matrix printer and the other three systems should include a Hewlett Packard Laser Jet II type of laser printer. Four of the computers should be equipped with an Earthnet 2000 board, 200 feet of cable and appropriate couplings for linking to the AMIS local area network. It is desirable that each system include a 3 1/2 inch as well as a 5 1/2 inch floppy disk drive.

Wordperfect, lotus 123, and Foxbase software should be purchased for each computer system. Three of the additional computers should have desktop publishing software. And the 486 computer will need the Generalized Algebraic Modeling System (GAMS) software.

There are some caveats however to the above summary. Of the 12 Economic Wing officers in the Quaid-E-Azam training program, only four have assignments within the three directorates and whose computer needs are explicitly accounted for in this plan. The computer needs of two planned work areas in the DER's commodity situation report program for which two of the Quaid-E-Azam trainees will likely be assigned are also identified above. This leaves six EW Quaid-E-Azam trainees who may have computer needs that are not recognized in this plan.

Thus, when the EW staffing plan and job descriptions are completed within the next two months, this computer plan may need to be revised. And there is a broader agricultural statistics network issue summarized below.

4.1. The Broader Economic Wing Statistical Network

There are many federal and provincial level institutions that support the Economic wing by supplying primary data and in other ways contributing to the GOP agricultural statistical system. Some of these agencies have a limited computer capability and others have no computer facilities. Providing such agencies micro-computer systems would greatly enhance the agricultural statistical system that the EW depends on for primary and

Table 6. Changes in the number of Economic Wing Computer Systems needed to maximize staff productivity

Directorate	Existing Computer Systems	Computer Systems Needed for Full Staff Productivity	Additional Computer Systems Required
Agricultural Policy (DAP)	3	8	5
Agricultural Statistics (DAS)	13	15	2
Economic Research (DER)	3	11	8
Office of the Director General (ODG)	4	5	1
Total Economic Wing	23	39	16

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secondary agricultural statistics that provide the data for AMIS and such important EW publications as Agricultural Statistics of Pakistan.

Additional computer systems in organizations providing the EW with data would be used to:

- o Report timely and relevant agricultural data while avoiding the transmission of exceedingly detailed information to high levels of data processing and management;
- o Facilitate the transmission and exchange of data between producers and users of data through the use of electronic storage media, thus avoiding duplicate and or hand inputing of data and reduce errors in data transmission;
- o Improve and enhance data collection, assembly, processing analysis and reporting capabilities and thus the efficiency and timeliness of information activities; and
- o Promote sharing of information and computer know-how via linked computer resources and capable personnel.

Appendix I contains a list of agencies in the broader agricultural data network of which the EW is a part and outlines the rationale for, and benefits from, providing these agencies microcomputers. However, the computer requirements of these agencies are not included in this computer plan.

5.0. COMPUTER SYSTEMS MANAGEMENT

Microcomputer technology can be used very effectively to enhance the productivity of an economic research and policy analysis organization such as the EW. But to be effective, microcomputers must be well properly maintained, serviced, and personnel trained in their use. EW computer management includes the following components:

5.1. Computer Systems Coordinator

The Deputy Director for Data Processing is designated the EW Coordinator for Computer Systems (Computer Coordinator). The Computer Coordinator will:

- o Maintain a current inventory of EW Computer systems using the EW Management Information System Computer File.

- o Insure that all EW Computers and major peripherals are under a standard maintenance and service contract with a reputable computer service firm.
- o Cooperate with EW Administration, in maintaining and dispersing, upon receipt of a properly completed EW Request for Computer Supplies and Services, expendable supplies such as floppy disks, printer paper, and printer ribbons.
- o Cooperate with EW Administration in contacting an appropriate computer service firm to arrange and supervise the repair and or maintenance of EW computers, upon receipt of a properly completed EW request for Computer Supplies and Services (Appendix 2).
- o Maintain, as an integral part of the EW Management Information System, (Appendix 3) a record of the Computer skills, training needs, and completed computer training of EW professional officers.
- o Plan and coordinate the computer training for EW professional staff.
- o As an integral part of the EW annual program planning, update and or revise the EW Computer Plan with input from the EW Directorates and approval of the DG.
- o Provide a quarterly report to the DG on the status of EW computer systems and EW Staff computer skills and training and review this report at a Quarterly Meeting of the Heads of the Directorates.

A junior professional officer of the Data Forecasting Section, DAS, will be assigned, on a full time basis if necessary, to assist the Computer Coordinator in accomplishing the above computer management plan.

6.0. COMPUTER TRAINING

Computer training will be one of the most important and most general types of training provided under the EPA Project. Outlined more fully under the forthcoming EW Training Plan, it will generally be of three types:

1.) Basic training in such computer operation as DOS, Lotus 123, Word Perfect, Quatro-Pro, and LAN operations will be provided all professional officers of the EW; and

2.) Specialized training in specific applications of the above and other such computer programs in statistical processing and data forecasting, economic research, and policy analysis will be emphasized in all subject matter technical assistance activities.

3.) Specialized computer maintenance training for the junior officer assisting the Computer Systems Coordinator.

To facilitate the planning, scheduling and conduct of computer training, the EW Staffing Plan and Job Descriptions, now under preparation according to the format in Appendix III, will specify the type and level of computer skills required of each EW professional officer position and the computer skills levels held by the position incumbent.

7.0. PROPOSAL FOR USAID FUNDED COMPUTER ACQUISITION

USAID/ARD has informed the EPA Advisors of their recent requisitioning of 15 microcomputer systems with the specifications listed in Appendix IV and of their intent to provide those 15 computer systems to the Economic Wing. The expeditious implementation of this proposal will enable the EW to implement most of this computer plan.

However, much of the economic research and policy analysis activity of the EW requires more RAM than the computers USAID/ARD has on order, some activities require different software than that on order by USAID/ARD, four of the additional EW computers will need LAN boards and cables, and one additional, 486 computer is needed to fully implement this computer plan.

Thus, it is further recommended that when the 15 USAID/ARD computers are received, they are immediately transferred to the EW, a further evaluation is made to ascertain gaps in RAM, software, and other computer system needs to make the new computers fully compatible with EW requirements. Further, existing EW computers were provided over several years by three different projects (EAN, AMIS and EPA), were manufactured by different companies in different countries, and supplies such as printer ribbons, repair parts, etc. may not be available in Pakistan. Thus this further evaluation should ascertain the serviceability of existing EW computer systems. We propose that additional USAID funds be made available to provide for any additional hardware and software necessary to fully implement this computer plan.

It is further recommended that USAID/ARD provide the Assistant to the EW Coordinator for Computer Systems specialized, short term training in microcomputer systems management and maintenance.

If additional funds are available, USAID should provide additional computers to agencies listed in Appendix I that provide agricultural data to the EW.

For its part, the EW will give high priority to implementing the computer training needs assessment as part of the EW staffing plan and job description activity, the computer systems management plan outlined in this computer plan, and the on-the-job computer training to fill the needs identified in the computer training needs assessment.

APPENDIX I

COMPUTER NEEDS OF AGENCIES SUPPLYING THE EW
WITH AGRICULTURAL DATA



Telex No. 5844 MINEA PK
Telegram : DAGES

D. O. No. EW-DAS(1)/90
Government of Pakistan
Ministry of Food, Agriculture and Co-operative
(Planning Unit)
Shaheed-e-Millat Sectt.
9th Floor, Blue Area,

Islamabad, the.....27th Feb.,.....19 91

**FROM: MR. S.M. ASLAM JAFRI
AGRICULTURE STATISTICS**

Subject: Request for Computer Systems.

Dear Dr. Meconnen,

Kindly refer to Agenda Item No.6 of the Minutes of the meeting of Heads of Directorates of the Economic Wing held on 13th December 1990.

Institutions, both at federal and provincial levels that support the Economic Wing in terms of its data and information needs, either have or do not have computer facilities to handle and report on data. These agencies that do have computing facilities may already have attained certain levels of computing capabilities utilizing their own limited number of microcomputer systems. Providing additional computers would certainly assist these agencies in expanding applications and broadening the personnel resource base to handle and manage data. Agencies that do not have any computer facilities would certainly benefit from the introduction of these equipment. Through intensive training in the uses and applications of those computer systems, the institutions' capabilities to manage, process, analyze and report on data would be strengthened and improved.

The computer systems would be used, among others to:

- i. Report timely and relevant agricultural data, and avoiding the transmission of excessively detailed information to top management levels.
- ii. Facilitate the transmission and exchange of data through the use of standard storage media (i.e diskettes, cassette tapes etc.) between users and producers of information.
- iii. Improve and enhance the data collection/assembly, processing analysis, and reporting capabilities in order to increase the efficiency and timeliness of information activities and the accuracy and consistency of information generated.

Cont'd...Page-2

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- iv. Promote sharing of information and computer know-how due to limited computer resource and capable personnel, establish a regular flow of source data; avoid unnecessary delays in data dissemination.
- v. etc.

I would like to request that EPA Project provide computer systems to each of the institutions indicated on the attached list.



DIRECTOR

Dr. Richard J. Meconnen
Chief Party USAID
EPA Project, Islamabad

LIST OF AGENCIES

1. Joint Secretary(Agri.)
M/O Food and Agriculture
Islamabad
2. Joint Secretary(Food)
M/O Food and Agriculture
Islamabad.
3. Irrigation Department
Government of Punjab
Lahore.
4. Irrigation Department
Government of Sindh
Karachi.
5. PASSCO, Lahore
6. Director
Food Department,
Govt. of Sindh, Karachi.
7. Director
Food Department
Govt. of Punjab, Lahore
8. Fertilizer Import
Directorate, Lahore
9. Director,
Land Records, Lahore
10. Director
Land Record, Hyderabad.
11. Director,
Crop Reporting Services
Government of Punjab, Lahore
12. Joint Director
Agriculture Statistics
Government of Sindh, Hyderabad
13. Director
Crop Reporting Services
Govt. of NWFP, Peshawar.
14. Statistician
Agriculture Department
Govt. of Balochistan, Quetta
15. ALMA, Karachi
16. I.G. Forest
for Forestry Data,
Islamabad
17. D.G
Fisheries
Karachi.
18. Punjab Agril. Supplies
Corporation, Lahore
19. SASO
Karachi.

APPENDIX II
EW JOB DESCRIPTION FILE FORM

ECONOMIC WING MANAGEMENT INFORMATION SYSTEM

Directory - STAFPLAN

File - JOBDESCR(IPTIONS)

NAME: DIRECTORATE: SECTION:

DIRECTORATE MISSION:

POSITION:

SUMMARY JOB DESCRIPTION:

FORMAL TRAINING

ACADEMIC DEGREES HELD (University or College):

OTHER FORMAL TRAINING COMPLETED:

SKILLS

SKILL LEVEL CODES - B = Basic; I = Intermediate; A = Advanced

STATISTICAL SKILLS - Describe followed by (level code)

S. S. HELD BY THE INCUMBANT:

S. S. REQUIRED FOR FULL PERFORMANCE:

S. S. TRAINING REQUIREMENTS:

ECONOMIC SKILLS - Describe followed by (level code)

E. S. HELD BY THE INCUMBANT:

E. S. REQUIRED FOR FULL PERFORMANCE LEVEL:

E. S. TRAINING REQUIREMENTS:

COMPUTER SKILLS - Describe followed by (level code)

HELD BY INCUMBANT (HBI);FULL PERFORMANCE REQUIREMENT (FPR);TRAINING NEED (TN)

DOS (DOS), WORD PERFECT (WP) , LOTUS 123 (123), QUATRO PRO (QP), D-BASE (DB), FOX BASE (FB), OTHER (OT) -DESCRIBE

HBI-DOS: HBI-WP: HBI-123: HBI-QP: HBI-DB: HBI-FB:
FPR-DOS: FPR-WP: FPR-123: FPR-QP: FPR-DB: FPR-FB:
TN-DOS: TN-WP: TN-123: TN-QP: TN-DB: TN-FB:

HBI-OT:

FPR-OT:

TN-OT:

INCUMBANT'S ENGLISH LANGUAGE CAPABILITY:

INCUMBANT'S ENGLISH LANGUAGE TRAINING NEEDS:

APPENDIX III

SPECIFICATIONS OF COMPUTERS ON ORDER BY THE USAID/ARD

ATTACHMENT 1
 FOOD SECURITY MANAGEMENT PROJECT (0491)
 DETAILED SPECIFICATIONS OF THE COMMODITIES

391-0491-4-80193
 Page 4 of 12 Pages

Lot No	Item	Units	Specifications	Unit Cost (US \$)	Total Cost (US \$)
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1. Microcomputer Systems:

(a)	Desktop Computers (Model-386SX)	10	386SX-based Desktop ISA computers utilizing: <hr style="width: 50%; margin-left: 0;"/> <ul style="list-style-type: none"> - Industry Standard BIOS and 2 MB RAM on mother board - Intel 80386SX processor - 0 wait states - Internal clock rate of 16 MHz or greater with 16 & 32 bit data path - External or Internal 60 Mb capacity or greater tape drive with QIC or compatible software in (DC-600A Format) - Hard disk drive with 80 MB or greater capacity with average access time of 28 ms or less - At least one 5.25" 1.2 MB built-in Floppy Drive - Intel 80387SX Math Co-Processor matched with the 80386SX processor - At least TWO Serial and TWO Parallel Ports - At least THREE available ISA expansion slots after configuration as above - VGA card compatible with VGA, CGA, MDA and MONO monitors with minimum 256K VRAM - VGA 14" or greater size diagonal screen color monitor offering 640 x 480 pixels or better resolution with dot pitch 0.30 or lower and 220V (50Hz) power supply without using stepdown transformer - 101-key Enhanced Keyboard with standard QWERTY type writer-like data keyboard, separate num. keypad, 5ft or longer coiled signal cable & industry standard DIN keyboard connector - Bus Mouse - MSDOS 3.3 or later version installed on, and bootable from the hard disk - Streaming tape backup software QIC or compatible to operate with internal/external tape drive - A 220V (50 Hz) power supply (without using step down transformer), capable of powering system with all required and optional expansion capabilities installed - Suitable breaker-type surge suppressor and multi-plug strip for use with the system providing a single power plug to the wall. 	3,500	35,000
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ATTACHMENT 1
 FOOD SECURITY MANAGEMENT PROJECT (0491)
 DETAILED SPECIFICATIONS OF THE COMMODITIES

391-0491-4-00199
 Page 5 of 12 Pages

Lot No	Item	Units	Specifications	Unit Cost (US \$)	Total Cost (US \$)
(b)	Desktop Computers (Model-386)	10	<p>386-based Desktop ISA computers utilizing:</p> <ul style="list-style-type: none"> - Industry Standard BIOS and <u>2 MB RAM</u> on mother board - Intel 80386 processor - 0 wait states - Internal clock rate of 20 MHz or greater with 32 bit data path - External or Internal 60 MB capacity or greater tape drive with QIC or compatible software in (DC-600A Format) - Hard disk drive with 100 MB or greater capacity with average access time of 28 ms or less - At least one 5.25" 1.2 MB built-in Floppy Drive - At least one 3.5" 1.44 MB internal/external Drive ✓ - Intel 80387 Math Co-Processor matched with the 80386 processor - At least TWO Serial and TWO Parallel Ports - At least THREE available ISA expansion slots after configuration as above - VGA card compatible with EGA, CGA, MDA and MONO monitors with minimum 256K VRAM - VGA 14" or greater size diagonal screen color monitor offering 640 x 480 pixels or better resolution with dot pitch 0.30 or lower and 220V (50Hz) power supply without using stepdown transformer - 101-key Enhanced Keyboard with standard QWERTY type writer-like data keyboard, separate num. keypad, 5ft or longer coiled signal cable & industry standard DIN keyboard connector - Bus Mouse - MSDOS 3.3 or later version installed on, and bootable from the hard disk - Streaming tape backup software QIC or compatible to operate with internal/external the tape drive - A 220V (50 Hz) power supply (without using step down transformer), capable of powering system with all required and optional expansion capabilities installed - Suitable breaker-type surge suppressor and multi-plug strip for use with the system providing a single power plug to the wall. 	4,730	47,300

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Item	Units	Specifications	Unit Cost (US \$)	Total Cost (US \$)
(c) Portable Computers (Model-386)	5	PORTABLE-386 / equivalent computers utilizing: ----- - Intel 80386 processor with 0 wait state - Internal clock rate of 20 MHz or greater with 32 bit data path - Industry Standard BIOS and 2 MB RAM expandable to 10 MB or higher - Hard Disk drive with 110 MB or greater capacity with average access time of 25 ms or less - At least one 5.25" 1.2 MB built-in Floppy Drive - Gas Plasma Display with 640 x 400 pixels or better resolution - At least ONE Serial and ONE Parallel Port - Shock mounted storage devices - Enhanced Keyboard with minimum of 91 keys, 10-key numeric keypad and 12 function keys - Mouse - DOS 3.3 or later version installed on, and bootable from the hard disk with logical disk partitioning of more than 32 MB - A 220V, 50 Hz power supply, capable of powering system with all required and optional expansion capabilities installed - With carrying case (nylon)	5,000	25,000
Sub-Total (1)	25			107,300

2. Printers & Peripherals		Unit Cost (US \$)	Total Cost (US \$)
(a) Printers	15 - HP Desk Jet 500 or equivalent with : Epson Emulation cartridge, minimum 5 ft. parallel printer cable and 220 (50Hz) power supply. -	600	9,000
	5 - HP LaserJet IIID printer with: 2 MB RAM , A4 size paper tray (210 x 297 mm), ONE legal size paper tray (8.5 x 14 in.), ONE Centronics Cable 1.5 meter, WORD PERFECT Font Cartridge, and 220V (50Hz) power supply.	3,250	16,250
(c) Color printers	4 - HP Paint Jet Color Graphic printer with : Printer Stand, Paper catcher, Parallel interface and 220V (50 Hz) power supply.	1,140	4,560
(d) Color printers	2 - HP Paint Jet(XL) color graphic printer with : Parallel printer cable minimum 6 feet or longer, 220V (50 Hz) power supply.	1,800	3,600
e) Scanners	3 - HP Scan Jet Plus Scanner with : ISA interface Kit, 220V (50 Hz) power supply.	1,650	4,950
f) Projection systems	6 MagnaByte model 5086 or compatible utilizing: Liquid crystal display, 640 x 480 full dot graphic image with 80 columns x 25 lines display, IBM PC-AT compatible, IR remote control, LCD cover cleaning kit, Aspect Ratio 4:3, Active area 8.06" x 6.06", video interface buffer, presentation software, 230V supply.	500	3,000
Sub-Total (2)		35	41,360