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DEPARTMENT OF  
ECONOMIC COOPERATION WITH U.S.A.

**U.S. ASSISTANCE MONITORING  
ANALYSIS STUDY**

**OPERATING CONCEPT DEVELOPMENT  
TASK REPORT**

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## I. INTRODUCTION

### A. Background

The United States of America (U.S.A.) has maintained a large foreign aid program with the Arab Republic of Egypt (A.R.E.) since 1975. From that time to date, the U.S.A. has obligated funds in the range of \$7.2 billion for assistance to Egypt. The yearly obligation is about \$1 billion. The assistance being provided varies from delivery of millions of metric tons of food, materials and equipment to the performance of many large-scale development projects. Currently, 70 large-scale assistance projects are active, and the delivery of over \$4 billion worth of commodities is planned or under way.

Until recently, this assistance effort was managed mostly by the U.S. Agency for International Development (USAID), which worked directly with individual ministries and other organizations within the A.R.E. in initiating and monitoring the various assistance activities. Both governments have agreed that Egypt should play a larger management role in the initiation and execution of U.S. assistance, and the Ministry of Investment and International Cooperation (MIIC) was given the task of coordinating this assistance. Within the MIIC, the Department of Economic Cooperation with U.S.A. (DECUSA) is to perform the direct coordination function. DECUSA is performing the U.S. assistance monitoring function, but currently needs additional facilities to perform its mission adequately.

A contract was let to JWK International Corporation (JWK) to study the DECUSA mission requirements and develop an overall long-term approach to a successful DECUSA operation. The contract calls for four tasks to be accomplished, each providing a separate report. The first task is to study the DECUSA requirements, the second task is to review the existing capabilities available to DECUSA, the third task is to develop a long-range operating concept, (this report is the result of that task), and the fourth task is to develop an implementation plan.

In executing the contract, the plan was for JWK to perform the first two tasks concurrently, and deliver the resulting reports to DECUSA for comments and guidance. After the guidance had been received, JWK would use the approved and verified information to perform the two remaining tasks of the contract. JWK delivered the two reports to DECUSA on August, 30, 1982, and discussed the contents of the reports at length with DECUSA and USAID. Although the two initial reports were well received, some minor changes were made to information contained within. Also, since the start of the study, DECUSA has devised an overall organization structure effort, which it plans to use. That structure has impacted the analysis of the study. In addition, after having studied the DECUSA monitoring requirements in depth, JWK was ready to obtain specific guidance from DECUSA as to what its relationship would be with USAID in performing certain

monitoring activities in concert. In the August/September 1982 meetings, DECUSA provided specific guidance as to its role in certain areas of assistance monitoring versus that of USAID. That guidance is a major source of information relating to the study. Finally, JWK learned additional information during the August/September visit to Cairo regarding computer equipment manufacturer capabilities, which caused other information in the earlier reports to be obsolete. As a result, although the two earlier reports served as a very effective vehicle to specify DECUSA requirements and to determine the DECUSA operating environment, sufficient changes to that information are currently known that the earlier reports should be adjusted to project an up-to-date picture. Rather than adjust the earlier reports, JWK has elected to synthesize pertinent information of the earlier report into chapters, and incorporate those chapters into the two later reports. Thus, the two later reports (one of which is this report) can be read without having to refer to either of the two earlier reports of the study.

## B. Study Assumptions

A number of assumptions have been made in the overall study effort which are pertinent to the recommendations contained in the reports produced. Each is discussed below.

### 1. Increase in Monitoring Work Effort Requirement

Although the extent of U.S. assistance funding to Egypt is not expected to increase dramatically in future years, the type of activities will change, and the change will cause additional effort in assistance monitoring. The major change will come from a factor which will result in many loosely related activities being grouped into single programs and allocated funding being used in a less rigid fashion.

This factor is the expressed plan of both involved governments to promulgate the use of the "sectoral approach" in allocating funding to activities. The term "sectoral approach" has not been rigidly defined in DECUSA/USAID parlance, and the exact meaning of the term depends upon the specific user; however, in general, the use of the sectoral approach to funding assistance activities will be to allocate funds at an overall program (or sector) level, rather than at a detailed project level. Also implied in the sectoral approach to funding is a higher degree of flexibility (than currently) of moving funds after initial allocation. The use of the sectoral approach will allow an ease in dynamically initiating newly conceived activities of high promise by using funding originally set aside for former project activities with outmoded or lower yield benefits. The sectoral approach may well be a more effective method to use funds in a more flexible manner; however, it will require additional monitoring effort because more options will be available for consideration when effective monitoring is taking place.

## 2. Need for Multiple Monitoring Organizations

Both USAID and DECUSA will continue to perform related U.S. assistance monitoring activities in the future, because both countries are vitally interested in seeing a successful effort take place. Some of the monitoring requirements will be shared--that is, although both organizations will be interested in the results, monitoring will be performed by one organization, which will then provide relevant information to the other. Other activities will be performed as a coordinated effort whenever the direct participation of both organizations is needed.

Implicit in this assumption is the guideline that monitoring efforts should not be duplicated by the two organizations whenever practical. Specifically, if USAID is performing a detailed monitoring function in which DECUSA does not need to be directly involved, DECUSA should only be informed of the activities.

## 3. Priority of Recommendation Implementation

The DECUSA monitoring function is important, and any major improvements should be performed as expeditiously as possible. However, the transition from DECUSA's current operation to any future operating concept will be an evolutionary approach without any disruption in current monitoring activities.

## 4. New Space for DECUSA

Discussions with DECUSA indicate that new office space is being considered for DECUSA. JWK is assuming that the new DECUSA office space will be sufficiently flexible to allow for an expansion of the DECUSA personnel complement and for the installation of minicomputer and other equipments.

## C. Study Objectives and Scope

### 1. Objectives

The major objective of this study is to derive overall approaches which will assist DECUSA in performing its mission more effectively. Along with approach descriptions, the study will set forth a practical implementation plan. Considering specific objectives of the study, JWK has three major areas of concentration: (1) personnel requirements, (2) organization structure, and (3) possible use of automation support in the DECUSA environment.

### 2. Scope

The scope of the entire contract awarded to JWK International is 60 workdays of professional effort and 30 workdays of administrative support. Of the 60 professional workdays, about 15 are devoted to each task. The analysis will emphasize possible solutions which utilize automation, with

about 65% of the effort directed toward the development of automated approaches and the remaining 35% to the development of solutions to analysis of personnel and organizational considerations. Due to the extent of workdays involved, only general solutions can be defined and overall designs and implementation approaches can be set forth.

#### D. Task Methodology

The methodology employed in preparing this report is closely associated with the two earlier tasks performed in the study. JWK prepared the two earlier reports, and met with both USAID and DECUSA to discuss particulars and possible changes to the reports due to inaccuracies. USAID, who had provided extensive assistance to JWK earlier in collecting related information, read the two documents and offered a number of valued comments. Several meetings took place between DECUSA and JWK concerning the earlier task documents. Also, JWK requested guidance from DECUSA regarding its specific functions in the overall role of U.S. assistance monitoring in comparison to the responsibilities of USAID. The tasks associated with the first two reports, in effect served as a fact finding exercise in which JWK could be able to pinpoint questions of scope of responsibility.

Once JWK had an understanding of DECUSA's specific role in the U.S. assistance monitoring effort, it redefined the requirements information with more specific roles spelled out, and used the general organization structure defined by DECUSA. The only area of consideration in which a major decision was not immediately apparent was in the use of automation support in the future DECUSA environment. An analysis of the overall cost and effort required to provide an automated capability was performed, and the cost and effort was compared against the approach of only using people. JWK made a recommendation to use an automated capability, and developed an overall DECUSA operating concept using such a capability.

#### E. Outline of Report

In addition to this Introduction, the report contains four sections and two appendices. Section II provides an overview of the U.S. assistance being supplied to Egypt, with an emphasis on monitoring activity factors. It is an updated, streamlined version of Section II of the Requirements Analysis Task Report. Section III discusses monitoring requirements, and synthesizes and updates Sections III, IV and V of the Requirements Analysis Task Report. Section IV defines initial conclusions related to DECUSA's long-term operation, specifies alternative operating considerations, and discusses JWK's rationale for recommending the use of automation support. Section V provides a projected description of DECUSA's long-term operating concept using automated support. Appendix A provides a listing of the types of commodities which have been procured by different A.R.E. ministries under the Commodity Import Program. Appendix B contains a discussion of automation capabilities in Egypt pertinent to DECUSA's requirements and all considerations which must be addressed if automation equipment is to be used by DECUSA.

## F. Guide to Reading the Report

This report was developed with two basic readers in mind, the senior level A.R.E. or USAID manager and the technical evaluator of recommendations. Each type of reader will be interested in different sections of the report. The senior level manager should read Section II and Appendix A to receive a valid prospective of what assistance is being provided by the U.S., and Sections III and V to gain a general understanding of how DECUSA will be involved in monitoring that assistance. Sections III and V contain overview paragraphs at the beginning of the sections, and these paragraphs are included specifically for the senior level manager reader who is not interested in the detail logic entailed in deriving conclusions. By reading Section II, Section III A., and Section V A., the reader can obtain an overall understanding of the contents of this report in less than one hour's reading time.

The technical evaluator should read Section III to determine whether JWK has a complete understanding of the monitoring assistance requirements, and Section IV to evaluate whether the important alternative approaches have been considered and the recommended approaches have merit for acceptance. Appendix B should be read as backup information regarding computer equipment availability. Finally, the technical evaluator should read Section V to understand how the recommendations will be incorporated into a future DECUSA operating environment.

## II. DESCRIPTION OF U.S. ASSISTANCE TO EGYPT

### A. Types of Assistance Provided

As has been mentioned in the introduction, the United States Government has maintained an assistance program with the Arab Republic of Egypt since 1975 and has obligated about \$7.2 billion, with a current funding of about \$1 billion per year. It is not in the interest of this study to describe the actual assistance to be provided; however, the various characteristics of the assistance are pertinent, especially those characteristics related to monitoring activities. In essence, the U.S. assistance to Egypt is of four different types: (1) commodities and goods shipped from the U.S. for direct distribution and use, (2) long-term, large-scale projects related to construction and infrastructure development, (3) technical assistance services from consultants, and (4) education and training of Egyptians, both in the U.S. and in Egypt. The monitoring requirements of these four types of assistance differ substantially and should be reviewed as separate entities.

#### 1. Commodities

Directly distributed commodities account for about \$4 billion of the \$7.2 billion obligated to date. A large portion (about \$1.6 billion) of the shipped commodities consists of 8.5 million metric tons of wheat and wheat flour. Other types of delivered food and supply commodities are: coking coal, tallow, tinplate, wood pulp, frozen chickens, chemicals, scrap iron, cotton seed oil, tobacco and cigarette paper, and various grains. The following types of equipment have been provided: buses, pickup trucks, truck trailers, electronic equipment, fire fighting equipment, diesel engines, etc.

Although the specific numbers of shipments vary from month to month and specific figures were not immediately available, some 2,000 letters of credit have been opened since the start of the assistance activity. If a letter of credit generates an average of five distinct shipments or detailed line items on a bill of lading, a general estimate is that as many as 10,000 shipments of U.S. assistance commodities and other items have been made to Egypt since the beginning of the U.S. assistance activity in 1975. A portion of the commodities has been distributed to private sector (not A.R.E. Government) organizations, and over 250 such firms have opened letters of credit. The extent of shipping activity for these commodities is such that USAID has seven persons stationed at the Port of Alexandria to track shipment of commodities.

#### 2. Development Projects

Stating the number of projects and amount of funds related to large-scale projects currently being executed can be misleading because the term project, in the parlance used by USAID, can refer to a distinct development

project, a program consisting of multiple development projects and/or technical assistance and/or training, or a program concerned with distributing sophisticated equipment. Certain "official" projects consist, in fact, of subprojects, and some of these subprojects are of a larger scope than other projects.

The USAID project could more appropriately be termed "Program," or perhaps "Assistance" agreement, because multiple diverse activities can take place within the same USAID project and multiple contracts can be awarded under the same USAID project number. In order to make these distinctions and at the same time keep terminology familiar to the reader, this report uses the term "program/project" for the USAID term, "project," and "project activity" or "subproject" for those activities in an USAID program/project which are performed in a single contract and can be monitored as a distinct activity.

In JWK's review of literature on all the U.S. assistance activities recently performed or in progress in Egypt, 78 separate program/project numbers were identified; of these, 70 were active and only 54 were both active and related to actual development projects with long-term development schedules. Closer review of the assistance being provided indicates that about 250 development project activities are being executed under the 54 active projects. One project, for example, Program/Project number 153, Neighborhood Urban Services, is comprised of 184 subprojects for 12 Cairo and 4 Alexandria districts. Under this program/project number, three demonstration project activities have already been completed, and multiple contractors are involved.

The 250 or so estimated development project activities vary widely in cost, duration, and type of development effort. At the upper cost level are the development of two power plants and two cement plants. The cost of construction for the Ismailia Electric Power Plant is \$141 million, and the Shoubra El Kheima Thermal Power Plant, \$190 million. The Suez and Quattamia Cement Plant development efforts will cost \$100 million and \$95 million, respectively. In contrast, a project activity to modernize the A.R.E. personnel and business income tax systems will cost about \$2.1 million. The durations of various project activities differ, with some of the existing project activities still in continuation after six years.

### 3. Technical Assistance

The technical assistance support portion of the U.S. assistance cannot be totally quantified because much of the technical assistance is imbedded in development projects and training activities. USAID has estimated that all consultant and contractor salaries are less than 5% of all the total assistance being provided. Reviewing the USAID program/project descriptions indicates that upwards of \$150 million is a valid estimate of the amount of technical assistance support obligated to date. Although this figure is only 2% of the total U.S. assistance package, the amount is sizeable and it should be monitored.

#### 4. Training

Training accounts for a small but significant portion of the overall assistance to Egypt. Three types of training are provided: (1) imbedded training provided as a portion of large implementation programs, (2) direct training programs provided to Egypt for specific purposes, and (3) training programs provided to Egyptians in the U.S. The first type of training is included in individual projects from a standpoint of funding. The amount of funding obligated for the second and third types of training is in the range of \$100 million, or about 1.5% of the total. Most of this \$100 million obligated for training and education purposes is to train people in the U.S. In fiscal year 1981, 561 people were sent to the U.S. for training.

#### B. Discussion of Assistance Fund Sources

##### 1. Economic Support Fund (ESF)

The ESF is the largest source of revenue for U.S. aid to Egypt, with a total of \$5.4 billion obligated to date. The ESF is divided into two categories: Commodity Input Program (CIP) and Projects. The CIP is related to the direct distribution of U.S. commodities to Egypt, and accounts for about \$2.5 billion in obligated funds to date. The CIP funds are generated from individual agreements made between the U.S. and Egypt for an overall sum of money, with the agreement sum further allocated to individual ministries in the A.R.E. Government. Currently, 16 agreements are still in force with commodity funds not fully expended. Each fiscal year, about two separate agreements are signed, and the funds of an individual agreement are allocated to about 10 different ministries. The most recent agreement, K604, became official in February, 1982, for a total sum of \$300 million. The K604 agreement funding has just been allocated to individual ministries, but individual letters of commitment have not yet been issued. Figure II-1 provides a list of all CIP agreements, with individual ministry allocation funding. Appendix A contains a detailed listing of the types of commodities being provided to the ministries under each agreement number. For each type of commodity listed in Appendix A is the associated obligated amount.

ESF projects are related to a wide variety of assistance, and account for \$2.9 billion obligated to date. Whereas the CIP monitoring is concerned with procurement and speedy delivery of commodities, ESF project monitoring is concerned with development efforts and interrelated milestones. About 78 separate program/project numbers are included in the ESF project portfolio. (See Figure II-2 for a list of active program/ projects.) As has been mentioned in earlier paragraphs, about 250 different discrete project activities exist. An important consideration regarding ESF program/projects is that the future funding approach to these activities will be to fund at the "sector" level, whereby a single sector may include the purview of multiple user agencies. The ramification of the sector approach to funding is that a given program/project may be executed by multiple user agencies, and may consist of a number of widely diverse project activities.

FIGURE II-1

CIP AGREEMENTS

Agreement No. (Fiscal Year) - Total* User Agency - Obligated Amount	Agreement No. (Fiscal Year) - Total* User Agency - Obligated Amount	Agreement No. (Fiscal Year) - Total* User Agency - Obligated Amount	Agreement No. (Fiscal Year) - Total* User Agency - Obligated Amount
K-026 (FY-75) - 79,926	K-048 (FY-77) - 440,000	K-053 (FY-80) - 30,000	K-603 (FY-81) - 230,000
Education 1,195	Communications 31,920	Communications 10,000	Agriculture 3,000
Electricity 1,506	Education 319	Electricity 2,123	Communications 15,000
Industry 24,968	Electricity 2,675	Housing 7,377	Economy 25,251
Housing 4,998	GOFI 16,878	Private Sector 3,000	Education 16,700
Supply 45,881	Governorates 2,000	Supply 7,438	Electricity 46,300
Transport 1,400	Health 3,716	Transport 62	GOFI 14,372
Refund 22 CR	Housing 1,500		Governorates 15,000
	Industry 79,460	K-054 (FY-80) - 250,000	Housing 2,500
K-027 (FY-75) 69,908	Information 20,164	Agriculture 2,000	Industry 39,500
Electricity 19,900	Private Sector 15,000	Civil Aviation 1,400	Information 13,900
Industry 5,951	SCA 13,008	GOFI 5,240	Irrigation 3,000
Irrigation 700	Supply 227,130	Governorates 4,000	Social Affairs 2,000
Housing 3,300	Transport 26,233	Health 1,530	Supply 26,128
Supply 30,792	Refund -3	Housing 1,173	Transport 7,349
Trade 7,491		Industry 83,655	
Transport 600	K-045A (FY-78) - 226,000	Information 13,699	K-604 (FY-82) - 300,000
SCA 1,200	Civil Aviation 250	Irrigation 1,000	Agriculture 8,000
Refund 26 CR	Electricity 15,003	Private Sector 25,000	Central Agency/Audit 2,000
	GOFI 1,158	SCA 3,347	Finance 3,000
K-029 (FY-76) - 100,000	Governorates 9,896	Supply 93,000	Health 3,000
Electricity 9,730	Housing 350	Transport 13,956	Industry 65,000
Health 5,975	Industry 33,304		Irrigation 5,000
Industry 25,345	Information 13,353	K-055 (FY-81) - 70,000	Justice 1,000
Supply 10,650	Private Sector 10,000	Private Sector 35,000	Land Reclamation 2,000
Transport 47,030	SCA 21,653	Supply 35,000	Reserve Fund 15,000
SCA 1,270	Supply 96,058		SCA 5,000
	Trade 844	K-601 (FY-79) - 85,000	Supply 70,000
K-030 (FY-76) - 150,000	Transport 24,131	Communications 1,500	Trade Facility Fund 50,000
Education 110		Education 16,700	Transport/Communication 40,000
Electricity 22,000	K-045B (FY-78) - 74,000	Electricity 9,500	The Press 10,000
Industry 33,549	GOFI 1,492	GOFI 9,919	Universities 9,000
GOFI 11,460	Industry 57,508	Industry 5,081	Urban Governorates 10,000
Information 18,951	Supply 15,000	Information 300	
Irrigation 192		Private Sector 8,500	
Supply 35,000	K-052 (FY-79) - 250,000	Supply 28,500	
Transport 25,382	Agriculture 4,980	Transport 5,000	
Governorates 3,357	Civil Aviation 300		
Refund -6	Communications 3,500		
Uncommitted 5	Housing 520		
	Industry 89,887	K-602 (FY-80) - 55,000	
K-036 (FY-76) - 65,000	Information 6,571	Education 10,000	
Agriculture 18,093	Irrigation 500	Private Sector 5,500	
Education 4,427	Private Sector 25,000	Supply 39,500	
Governorates 2,987	Supply 90,000		
Housing 1,662	Trade 1,000		
Industry 6,482	Transport 27,742		
Information 5,000			
Irrigation 3,204			
Private Sector 10,000			
SCA 3,680			
Supply 519			
Transport 8,946			

\* As of July 31, 1982, in thousands of dollars.

FIGURE II-2

U. S. ASSISTANCE PROJECTS

Title	Ministry/Agency*	Initial FY	Obligated**	
			Grant	Loan
1 Canal Cities Electric Distribution	Egyptian Electric Authority	75	30,000	
2 Technology Transfer & Manpower Development	Shared	75	134	
3 Feasibility Studies I	Shared	75	894	
4 Suez Canal Clearance	Suez Canal Authority	75	44,026	
7 Road Building Equipment	Suez Canal Authority	75	13,888	
8 Talkah Hgiwan Gas Turbines	Egyptian Electric Authority	76		69,000
9 Ismailia Power Plant	Egyptian Electric Authority	76	141,000	
10 Mehalla Textile Plant	Misir Spinning & Weaving Co.	76		96,000
11 Technology Transfer & Manpower Development	Shared	76	1,889	
12 Suez Cement Plant	Suez Cement Company	76	100,000	
13 Technical & Feasibility Studies II	Shared	76	14,938	
14 Alexandria Cargo Equipment	Port of Alexandria	76		31,000
15 Rural Health Delivery System	Health	76	7,000	
16 Applied Science/Technology Research	Academy Scient. Research & Technology	76	24,600	
17 Water Use and Management	Irrigation	76	13,000	
18 Development Industrial Bank I	Development Industrial Bank	76		31,000
19 PVC Pipe Drainage	Egypt Public Authority Drainage Projects	76		31,000
20 Integrated Social Work Training Centers	Social Affairs	77	4,000	
21 Develop Decentralization I	ORDEV	78	26,200	
23 National Energy Control Center	Egyptian Electric Authority	78	2,500	41,000
25 Technical and Feasibility Studies II	Shared	77	18,000	
26 Technology Transfer and Manpower Development	Shared	77	24,500	
27 Rice Research Center and Training	Agriculture	77	21,800	
28 Grain Silos	GASC	75		44,275
29 Family Planning	Health	77	26,500	
30 Shoubra Electric Power Plant	Egyptian Electric Authority	79	190,000	
31 Agricultural Mechanization	Agriculture	78	40,000	
33 Urban Electric Distribution	Egyptian Electric Authority	77	10,000	46,012
35 Canal Dredging Equipment	Egyptian Dredging Company	77	5,200	26,000
37 Grain Storage II	GASC	76	2,500	41,000
38 Cairo Water	GOGCWS	77	31,000	30,000
40 Irrigation Pumps	Irrigation	77	8,000	11,000
41 Agriculture Development Systems	Agriculture	77	12,900	
42 Technical and Feasibility Studies	Shared	78	23,000	
45 Development Industrial Bank II	Development Industrial Bank	78	2,000	
47 Suez Canal Port	Red Sea Port Authority	78		30,000
48 Canal Cities Water & Sewage	Gen. Org. for Sanitary Drainage	78	36,000	60,000
52 Quac:amia Cement Plant	Suez Cement Company	78		95,000
54 Telecommunications I	ARETO	78		40,000
60 Poultry Development	Agriculture	77	12,500	
61 Development Planning Studies	Cairo University	78	15,800	
64 Aquaculture Development	Agriculture	78	27,500	
65 Urban Health Delivery	Health	79	37,300	
66 Low Income Housing	Housing	78	80,000	
70 Major Cereals	Agriculture	79	47,000	
71 Hydrographic Survey	Maritime Transport	77	8,000	
72 Port Said Salines	El Nasr Salines Company	77	13,000	
75 Telecommunications II	ARETO	79	80,000	
79 Small Farmer Production	Agriculture	79	25,000	
89 Alexandria Sewage	AGOSD	77		15,000
90.1 Management Develop. for Productivity	Industry	80	8,500	
90.2 Vocational Training for Productivity	Industry	91	17,500	
90.3 Industrial Technical Applications	Industry	81	10,000	
90.4 Industrial Productivity Improvement Activities	Industry	81	3,000	
91 Cairo Sewage	Gen. Org. for Sanitary Drainage	78	99,100	
95 Agricultural Cooperative Development	Agriculture	79	5,000	
96 Small Scale Agricultural Activities	Agriculture	79	1,700	
97 Private Investment Econou. Fund	Economy	79	33,000	
100 Alexandria Wastewater System	AGOSD	79	87,321	
101 Industrial Production	Industry	78	46,445	98,555
103 Basic Villages Service	Economy	80	70,000	
105 Minerals, Petroleum & Groundwater Assessment	EGSMA	80	20,700	
110 Peace Fellowships	Economy	80	54,000	
112 Private Sector Feasibility Studies	Economy	79	5,000	
113 Sinai Planning Studies	Shared	79	2,500	
114 Vehicle Maintenance Training	GSLT	80	4,500	
115 Tax Administration	Finance	80	2,100	
116 Agriculture Management Development	Agriculture	80	5,000	
117 Telecommunications III	ARETO	80	80,000	
118 University Linkages	ESCU	80	27,500	
127 Principal Cities Development	Local Governments	81	20,000	
136 Suez Community Health Personal Training	Health	80	2,700	
137 Diarrheal Diseases	Health	81	26,000	
139 Basic Education	Education	81	39,000	
142 Agriculture Data Collection and Analysis	Agriculture	80	5,000	
143 Decentralized Supply Fund	Economy	80	50,000	
153 Neighborhood Urban Services	Local Governments	80	20,000	
160 Rehabilitation and Modernization of Aswan Dam	Aswan Dam Authority	82	100,000	

\* The term "shared" means that many user agencies may use the funding of the project.

\*\* \$ thousands

## 2. Public Law 480 Funding

PL-480 funding is divided into three areas: Title I, which constitutes the loans for the Food for Peace Program; Title II, which is related to child health care; and Title III, which constitutes, in effect, the grant portion of the Food for Peace Program. Titles I and III have, in essence, become a supplement to the Egyptian wheat food crop, and monitoring is required to determine how much additional wheat and wheat flour is needed to augment Egyptian wheat production. In 1982, 1.5 million metric tons of wheat and wheat flour are expected to be provided as a supplement to meet one quarter of the Egyptian wheat requirement. About \$1.68 billion has been funded to date in relation to Titles I and III, and \$111 million in relation to Title II. In Fiscal Year 1982, nearly \$311 million was provided for the PL-480 program, with \$275 million to Title I, nearly \$21 million to Title II, and \$15 million to Title III.

### C. User Agency Assistance Allocations

Before funding allocations of different user agencies can be described and understood, an explanation is needed regarding the source of information and level of specificity. The funding information used in the study was obtained from USAID and is maintained at a general user agency level, and, in certain cases, the funding of many user agencies are merged together. Three examples are "private sector", "local governments" and "governorates". In actuality, these groupings represent a number of individual user agencies. Also, individual program/projects in certain circumstances are controlled as a joint effort by multiple user agencies. The funding allocation of those projects to a single organization is not accurate. In addition, certain program/projects pertain to feasibility studies and technical assistance, and funding is not broken down by specific user in those activities. Finally, a major portion of the U.S. assistance funding is related to PL-480, and those funds are distributed directly. In the case of PL-480 funding, the only applicable user agency involved is the Ministry of Agriculture. The distribution of all allocated funds among user agencies should be only considered for ESF funds because PL-480 funds are not available for allocation to multiple user agencies.

With the above considerations in mind, the reader can understand in proper context the funding allocation in Figure II-3 of individual user agencies. Although 43 user agencies are listed, the user agency specified as "governorates" represents up to 12 different governorates. A valid assessment is that about 55 major user agencies play an important role in U.S. assistance management.

FIGURE II-3

USER AGENCY FUNDING ALLOCATIONS  
(in thousands of dollars)

	<u>PROGRAM/PROJECT ALLOCATION</u>	<u>CIP ALLOCATION</u>	<u>TOTAL</u>	<u>PERCENT</u>
Academy of Scientific Research & Technology	24,400		24,400	.49
Alexandria General Organization for Sanitary Drainage	102,321		102,321	2.04
Agriculture	203,400	28,073	231,473	4.62
A.R.E. Telecommunications Organization	200,000		200,000	3.99
Aswar Gas Authority	100,000		100,000	1.99
Cairo University	15,800		15,800	.31
Civil Aviation		1,950	1,950	.04
Communications		61,920	61,920	1.23
Development Industrial Bank	33,000		33,000	.66
Economy	212,000	25,251	237,251	4.73
Education	39,000	49,452	88,452	1.76
Egyptian Geological Survey and Mining Authority	20,700		20,700	.41
Egyptian Dredging Company	31,200		31,200	.62
Egyptian Electric Authority	552,012		552,012	11.01
Egyptian Public Authority of Drainage Projects	31,000		31,000	.62
Electricity		128,812	128,812	2.57
El NASR Saline Company	13,000		13,000	.26
ESCU	27,500		27,500	.55
Finance	2,100		2,100	.04
General Authority of Supply Commodities	87,775		87,775	1.75
General Organization for Industry		61,500	61,500	1.23
General Organization for Greater Cairo Water Supply	61,000		61,000	1.22
General Organization for Sanitary Drainage	195,100		195,100	3.89
Governates		37,240	37,240	.74
General Syndicate for Land Transport	4,500		4,500	.09
Health	100,300	11,221	111,521	2.22
Housing	80,000	23,400	103,400	2.06
Industry	184,000	484,544	668,544	13.33
Information		91,938	91,938	1.83
Irrigation	32,000	8,596	40,596	.81
Local Governments	40,000		40,000	.80
Maritime Transport	8,000		8,000	.16
MISR Spinning and Weaving Company	96,000		96,000	1.91
Organization for the Reconstruction of the Egyptian Village	26,200		26,200	.52
Private Sector		137,000	137,000	2.73
Port of Alexandria	31,000		31,000	.62
Red Sea Port Authority	30,000		30,000	.60
Social Affairs	4,000	2,000	6,000	.12
Suez Cement Company	195,000		195,000	3.89
Suez Canal Authority	57,914	44,156	102,070	2.04
Supply		781,036	781,036	15.57
Trade		8,785	8,785	.18
Transportation		187,969	187,969	3.75

### III. ASSISTANCE MONITORING REQUIREMENTS

#### A. Overall Discussion

Monitoring of U.S. assistance to Egypt is currently being performed adequately at the various stages of execution by different U.S. and A.R.E. organizations. USAID has a staff of 250 people in Egypt whose primary function is monitoring U.S. assistance-related operations. Also, USAID personnel in Washington, D.C. perform monitoring functions, especially in regard to procurement. DECUSA is currently monitoring the U.S. assistance operation, and has a strong knowledge of what is taking place regarding U.S. assistance in Egypt. The inclusion of a discussion on monitoring requirements and goals is not meant to imply that the monitoring function is not currently being performed. Rather, this section takes an overall view of what should be monitored and identifies specific monitoring functions which would be performed by DECUSA at some time in the future.

In the life of a typical U.S. assistance activity, there are four general stages which usually take place. The first occurs during budget preparation when the activity is introduced as a possible assistance endeavor. When the activity is deemed worthwhile, it will be included as a portion of the annual budget request for assistance funds from the U.S. Congress. After the activity ultimately has been approved and included in the budget, the second stage, the feasibility study, then takes place, and the overall plan to execute the assistance activity is initially formulated. In many circumstances, it will be appropriate to initiate a feasibility study prior to the project activity budget preparation, and the second stage will precede the first stage. Upon approval of the feasibility study, the procurement stage takes place, and a contractor is ultimately selected. The fourth stage is the execution of the activity.

The above sequence of events varies from activity to activity. In the case of commodities, the budget preparation takes place every year, but a formal agreement, which may last three to five years, will be drawn up after extensive negotiations have taken place between the two countries. Feasibility studies for commodity assistance are not usually performed, but requirements analyses will be done for various types of commodities when agreement amounts are being allocated to discrete financial statements for individual ministries. In the procurement stage, certain procurements are performed by an A.R.E. Ministry and others by USAID. In addition, multiple procurements are normally required for a single USAID program/project. Also, the assistance activity execution scheduling varies widely among activities. Finally, funding varies from activity to activity in a number of ways. For example, ESF commodity funding differs from ESF project funding. Certain earlier ESF projects were the results of loans, whereas most recently ESF projects are funded as grants. PL-480 funds are handled differently depending upon the title (i.e., Title I, Title II or Title III). Accordingly, monitoring cannot be performed in the same fashion for all activities.

A very important consideration in understanding future U.S. assistance monitoring requirements is that the monitoring activity will change due to the planned use of the "sectoral approach" to funding. The future U.S. assistance for program/projects will tend to program groups of varied project activities, which will be funded at sectoral program levels. A sector can very well include functional considerations of multiple Egyptian ministries, and funds will be moved from activity to activity with a wider degree of latitude than presently. As a result, more monitoring activity will be required to control the use of the same overall level of funding. Currently, ministries and other user agencies report status information on a quarterly basis. With the ability to make changes more flexible because of the eventual change over to the sectoral approach to using U.S. assistance, monthly reporting of program/project status is a more reasonable reporting cycle.

DECUSA will have a hand in all aspects of U.S. assistance activities, and will be required to play a major monitoring role in the budget preparation stage. In the feasibility study and procurement stages, DECUSA will be informed of activities taking place and will review results. In the assistance activity execution stage, DECUSA will perform overall monitoring, "trouble-shooting," and information reporting functions.

One of its most important roles, and the role which would have one of the highest priorities in the future of DECUSA operation, is the coordination of budget preparation. It is critical to the success of the U.S. assistance effort in Egypt that budget requests be monitored from an overall A.R.E. Government standpoint by an Egyptian organization without parochial interests. DECUSA's position lends itself to objectivity regarding the relative value of various requests from different A.R.E. ministries, and DECUSA is in the position to make recommendations regarding a given ministry's capability to use and administer U.S. assistance.

For the same reasons that DECUSA should control the annual budget preparation, it should review the feasibility study exercise to insure that study results reflect the interests of the entire country and not just one ministry. Also, budget scheduling and planning for funding necessitate that DECUSA review feasibility study results. In addition, large-scale assistance activities may exceed the purview of a single ministry, and a number of ministries may have legitimate interests in a single U.S. assistance activity. In such circumstances, DECUSA would monitor the activities of the personnel from multiple ministries, and coordinate feasibility study activities. Finally, DECUSA should be apprised of the results of any procurement activity which resulted from a feasibility study or any other decision-making exercise which caused U.S. assistance to be obtained.

Besides the current monitoring activities which are taking place for ongoing assistance, JWK has determined that three additional functions should be performed: (1) a monthly monitoring and reporting of program/project status, (2) a monthly monitoring and reporting of funding status and comparison of actual versus planned expenditures, and (3) a periodic planned auditing of individual programs/projects on a biennial basis. The

first two functions necessitate that programs/projects should be analyzed at initiation from a standpoint of scheduling, and specific task/milestone execution and planned expenditure schedules be prepared at that time. All the mentioned functions will be performed by DECUSA with assistance and coordination with USAID. A ramification of these new functions is that the user agencies will need to report progress on a monthly rather than quarterly basis.

## B. Discussion of Individual Monitoring Activities

In reviewing the U.S. assistance monitoring requirements, JWK defined five distinct areas which together composed the entire monitoring requirement. They are as follows: (1) budget preparation, (2) feasibility study monitoring, (3) procurement, (4) performance and execution monitoring, and (5) funding expenditure monitoring. Regarding performance and execution monitoring, and funding expenditure monitoring, the activities are related and are somewhat performed in concert.

In the paragraphs below, each of the five monitoring areas is discussed separately with an emphasis on DECUSA responsibilities and requirements. Regarding performance and execution monitoring, the specific types of assistance are treated in detail. Whenever possible, an effort has been made to estimate the number of reports which might be required to be generated and the number of DECUSA work years (per year) which would be used to satisfy DECUSA responsibilities.

### 1. Budget Preparation

#### a. General Discussion

Budget preparation is performed on a yearly basis and the workload associated with this function will be unbalanced throughout the year. The work for a given year's budget preparation may be performed one to two years prior to the beginning of the actual year, and will entail a number of steps to form a budget plan. Because DECUSA's organization is relatively new and because a strong emphasis is being made to use the sectoral approach to funding, detailed budget preparation procedures for future U.S. assistance to Egypt will need to be formalized. JWK can surmise many of the budget preparation activities, and can develop general manpower estimates at this writing. First, all ministries and other potential user agencies will be solicited for assistance candidates. Depending upon the number and type of responses, the budget preparation work effort will vary. Each request would need to be reviewed for applicability, meetings would need to be carried on with ministry personnel regarding the requests, and initial determinations would need to be made. When a given request has a high degree of merit, DECUSA would take steps with USAID to have a feasibility study performed.

The next step would be to review all existing assistance activities from the standpoint of future needs, and develop future budget additions. All program/projects and commodity agreements will be reviewed, and the

responsible ministry personnel contacted. Existing activities will be studied with regard to the rate of spending, and actual expenditures will be compared against the activity budget. For each of the 70 program/projects, the 16 CIP agreements, and the PL-480 activities, a number of meetings will be held. Both USAID and the ministry personnel will be involved. Spending analysis reports will be developed, and initial recommendations will be formulated. These reports would be prepared by both the people who are monitoring the individual activities and budget financial analysts.

The third step is the initial total budget formulation for a fiscal year. All requests which have been deemed feasible and additions to existing activities would be collected to develop a total program. Steps would be taken in the initial budget plan process to have consistent costing assumptions used for developing figures for activities from the different ministries. Requests would be scrutinized to determine whether proper technical assistance and training costs are included in all new projects. DECUSA budget people would work with ministry personnel to insure that all projected costs are included and the costs are relatively accurate for a given request in relation to all other requests. USAID and the Deputy Prime Minister of MIIC would be presented with the initial package along with charts and tabular reports depicting the various funding breakdowns by ministry, functional areas, commodities, etc. Guidance would be received from both USAID management and the Deputy Prime Minister regarding adjustments.

DECUSA would act in a liaison function, returning to the ministries to seek revisions to earlier requests. Numerous meetings would be held, and compromises and adjustments would be made to earlier versions of the budget. Each time a new budget plan is formulated, new reports, charts and tables would need to be developed, along with presentations to the Deputy Prime Minister and USAID management.

#### b. Budget Reporting Requirements

The annual budget preparation exercise will be an interactive process, and budget projections of U.S. assistance will be developed for numerous options by DECUSA before a final budget will be decided upon. Because many of the U.S. assistance activities will be ongoing over several years, the preparation of budget reports will consist of augmenting existing program/project and CIP activities with new assistance concepts.

An approach to preparing the annual U.S. assistance budget reports which would be used with the presence of an automated capability, would be to prepare projected budget reports first at the same level of specificity as existing detailed activity and funding reports, and produce management reports with the future budget request data in the same format as existing assistance management reports. The history of the current activities would be used to forecast what will take place with similar candidate projects. The budget forecast management reports would depict levels of funding in

following years by: user agency, type of project activity, extent and percent of types of commodity. Once the initial set of management budget forecast reports had been made for a certain set of requested assistance activities and presented to management, the set of detailed activity information could be adjusted slightly by adding, deleting or modifying the information of one or more specific activity candidates. Management reports could be produced again with any new guidance from management reflected in the reports. Upon agreement of a final budget plan, DECUSA would have the next fiscal year's detailed assistance activities nearly established.

In the event that DECUSA does not have an automated capability, the approach to developing budget reports for management would be different. After initial information has been prepared relating to specific requests from specific user agencies, DECUSA would develop an initial budget plan and prepare management reports from summarized information after extensive calculations had been made. On a subsequent rendition of the budget development exercise, caused by new guidance received from management, new management reports would be developed by making adjustments to the summarized information in the earlier reports, and adjusting detailed activity information as expeditiously as possible. Depending upon extent of time available for preparing changes to an initial budget, the specific selection of future activities may be made partially due to ease of budget plan adjustment.

The budget exercise would require an estimated 120 final reports to be produced if the current number of user agencies remains the same. This figure includes two detail reports (one in English and one in Arabic) for each user agency using CIP funding, project funding, and PL-480 funding, and summary reports by user agency, type of assistance, sector, and yearly expenditure forecast. It is assumed that multiple iterations or budget report preparation will be performed each year.

#### c. Personnel Requirements

The budget planning activity will be a continuing effort throughout the year for certain personnel, while others will be used intensively for short periods of time during actual budget plan formulation. The total budget preparation effort each year will be in the range of four work years, with periods of heavy effort using as many as 10 professional DECUSA personnel to work on the budget.

### 2. Feasibility Study Monitoring

#### a. General Discussion

The results of feasibility studies will affect future budget plans, and DECUSA will take interest in the progress and results for all feasibility studies on potential U.S. assistance projects. At the initiation of any feasibility study, DECUSA will review the objectives of the feasibility study and determine whether all ministries which should be involved

are involved. Also, the contractor or other people performing the study will be briefed on what guidelines DECUSA wishes them to use. During a period in the study in which alternative approaches are derived, DECUSA personnel will participate in a meeting to determine whether any valid alternatives have been inadvertently missed for evaluation.

After a feasibility study has been completed, DECUSA will review the resulting report in depth to assure that the study was performed properly. In the event that the feasibility study results are affirmative, DECUSA will take steps to ensure that the prospective project will be in the next year's budget. All feasibility studies will be stored and reviewed for applicability at later periods where related assistance requests are made by the ministries.

Implied above is the need for a guideline to be developed regarding feasibility studies so that the feasibility studies being prepared will be somewhat consistent and will prepare information which can be used for future budgeting. Besides a format outline, the feasibility study guideline will include methods of considering alternatives and methods of costing different types of items such as people, energy, space, etc.

#### b. Personnel Requirements

DECUSA currently uses three professionals on a full-time basis, and that level of effort should not diminish in the future.

### 3. Procurement Monitoring

Currently both the user agencies and USAID are performing all procurement activities, and those procurement activities actually performed by the user agencies are monitored by USAID. The only DECUSA participation in the procurement activity will be that DECUSA will be informed of the results of all procurements. After procurement activities have taken place, DECUSA will monitor the spending of funds; however, little or no manpower will be expended on the direct procurement activities.

### C. Performance and Execution

As has been stated earlier, different types of assistance activities require different performance and execution monitoring tasks. JWK has identified four types of assistance: (1) delivery of commodities, (2) program/project execution, (3) technical assistance, and (4) training. The monitoring of each type is discussed separately below.

#### 1. Commodity Distribution Monitoring

##### a. General Discussion

When a commodity import program (CIP) agreement is signed between the U.S. and Egypt for the U.S. to provide commodities, the agreement will be for a single large sum. DECUSA personnel will segment the agreement into

specific letters of commitment, with each letter designating a specific A.R.E. ministry and a specific Egyptian Commercial bank. Information will be maintained regarding the letters of commitment.

The ministry in turn will use the letter of commitment to initiate procurements for different commodities. USAID will be involved in the review of all procurements, and will insure that goods are procured from American firms and that a certain portion is shipped by American carriers. When a procurement is made, one or more letters of credit are issued to American banks from the Egyptian bank holding the letter of commitment. Most often separate letters of credit will be issued for both the commodities purchased and the shipping charges. A letter of commitment will generate many letters of credit.

The above events will affect DECUSA, which will maintain information regarding which letters of credit are associated with a given letter of commitment; keep track of the results of procurement; and maintain information for each letter of credit including the amount of each type of commodity purchased, vendors, dates, American banks, letter of credit numbers, and shippers.

Currently, USAID receives the shipment dates and bills of lading for individual shipment dates, and insures that shipment takes place and that the goods are in acceptable condition. Seven USAID people at the Port of Alexandria inspect such arriving goods. The only significant problems which have been reported are related to delays due to the customs officials trying to levy customs on U.S. assistance goods.

The last facet of commodity distribution monitoring is checking on the actual use of commodities. USAID performs such checks because agreements stipulate that the U.S. can be reimbursed for those commodities not used after a specified period of time following delivery.

Currently USAID maintains an automated commodity shipping status system which keeps track of individual shipments of U.S. assistance commodities arriving in Egypt. In that system, information is maintained on the agreement number, letter of commitment number, letter of credit number, supplier, ship or other carrier, type of commodity, amount of commodity, scheduled and actual delivery dates, and costs. USAID uses the system to monitor commodity deliveries and to check on the condition of commodities at arrival into port.

The information contained in the USAID commodity monitoring system appears, at this writing, to include all the detailed information needed for commodity delivery monitoring. DECUSA receives reports from this system, and, at least in the foreseeable future, this information maintained by USAID will be received by DECUSA for commodity delivery reporting.

Regarding the PL-480 commodity distribution monitoring, most of the monitoring functions are similar to the CIP distribution monitoring, with

the exception that the Title I and II programs involve grain, and only the ministry of Agriculture is involved in Title I and II. In PL-480 Title II funding, two private organizations perform the distribution.

b. Reporting Requirements

With the extent of commodities being shipped, a monthly status report should be produced for every outstanding letter of commitment. This report should be produced in both English and Arabic. Also, monthly status summary reports should be produced regarding user agency and agreement number. It is assumed that at least 100 letters of commitment would have activity in a given month. A valid estimate is that in the range of 120 commodity distribution reports would be produced in a given month. See Figure III-1 for a sample report in English.

c. Personnel Requirements

The major personnel requirements for commodity distribution monitoring will be performed by USAID who will collect commodity distribution data, prepare data in machine-readable form and prepare English reports on the USAID Wang system which would be delivered to DECUSA. In addition, USAID will perform all the actual checking of individual commodity delivery, and would only use DECUSA personnel for "trouble-shooting" when deliveries have not been made, or commodities are found to be defective.

DECUSA would be involved in monitor status checking and preparation of Arabic reports, trouble-shooting, and after-delivery spot checking. Facets of the trouble-shooting would be concerned with negotiating with vendors over delivery problems and rebates for defective commodities. A detailed discussion with DECUSA indicates that an estimate of 10 DECUSA professional personnel will be directly involved in commodity distribution monitoring. Of these personnel, two will be involved in PL-480 commodity delivery monitoring and eight with ESF commodities. The eight personnel will be involved as follows: four people for distribution tracking and report preparation, two people for trouble-shooting, and two people for after-delivery checking.

2. Program/Project Status

a. General Discussion

Currently, no organization is monitoring program/project milestones in an automated fashion, and the project activity monitoring is done individually by USAID project officers, ministry people, and DECUSA personnel. Coordination is performed, a funding report is produced monthly, and a project status report is produced quarterly by USAID. Ministries are obliged to prepare status reports on a quarterly basis, and official monitoring is accomplished through such reports. On an annual basis, a review of all program/projects are made, and a report is generated.



A procedure with the following features should be developed. All program/projects would be segmented into discrete tasks at program/project initiation, with associated milestones or deliverable product dates, and updated monthly in a report. Each program/project status report would contain the status of all initiated tasks in regard to meeting deadline dates. Also included on the report would be the specific contractor responsible for each task, program/project description, ministry and AID personnel involved, and funding. With this procedure in place, user agencies would report on the status of specific tasks every month, and both DECUSA and USAID would be able to monitor program/project activity status on a monthly basis.

Currently, after a feasibility study has been completed and approved, and funding has been included in an approval by Congress, USAID will prepare a Project Identification Document (PID) and a project paper before a project grant agreement can be drawn up and signed between the requesting ministry. In the future, DECUSA personnel would be involved in the review of the PID and the project paper. Once the project agreement has been signed, a DECUSA program/project monitor would be assigned, and the program/project would be defined from three different standpoints: (1) type of activity (i.e., technical assistance, commodity, development, and training), (2) tasks to be performed and milestones to be met, and (3) projected schedule of funding expenditure by monitoring. Milestones and funding schedules will be agreed upon by USAID, DECUSA and the appropriate ministry personnel.

On a monthly basis, DECUSA would receive status information from the user agencies on all tasks in progress and all milestones which are scheduled during the month. The status information would be reflected in a produced report which would be prepared by DECUSA in both Arabic and English and delivered to the user agency and USAID.

Whenever a date is missed or the funding is not being spent as planned, DECUSA will request explanations from the ministry and record replies. Whenever adjustments are to be made to schedules, DECUSA will meet with the ministry and USAID to prepare new schedules. Reasons for slippage will be documented along with the rationale for the new schedule.

On a periodic basis, generally every two years, DECUSA will conduct a detailed program/project inspection on each active program project. The program/project inspection will be conducted by some one other than the DECUSA personnel performing the month-to-month monitoring; however, the program/project monitor will give a briefing on the program/project, and assist as needed. Those program/projects with a history of problems will be inspected on a higher priority than those program/projects on schedule. Although each program/project will have different inspection needs, it is estimated that one work month per inspection will be required.

In the discussion above, the extent of liaison with upper echelon government management and USAID was not stressed and specified. In actuality, both USAID and upper echelon management would be integral to the program/project monitoring function. On all formal meetings regarding program/

project status, USAID would be involved. Monthly status reports, both relating to all program/projects and to just those program/projects with schedule slippages, will be prepared in both Arabic and English, and will be delivered to the user agencies and USAID, respectively.

b. Reporting Requirements

Currently, 70 program/projects are active, and a report for each would be required on a monthly basis. See Figure III-2 for a representation of the program/project status report. In addition to monthly status reports, a delinquent task report would be produced on a quarterly, annual and as required basis, different reports on different levels would be needed designating both project status and funding information.

c. Personnel Requirements

Personnel requirements will be broken down into five different areas of program/project monitoring: (1) program/project initiation, (2) monthly status monitoring, (3) program/project audit, (4) program/project completion, and (5) status monitoring management. Regarding program/project initiation, in the range of 2 to 3 work months will be required on DECUSA's part to initiate each new program/project. This estimate includes reviewing the feasibility study and PID paper, studying contracts, working with USAID and the user agency to define individual tasks and schedules, developing project descriptions and other descriptive data in both Arabic and English, developing a funding expenditure schedule, and performing extensive coordination with user agencies, USAID and possibly contractor personnel. All developed information would have to be prepared and checked for validity, and a manual file would be established. Considering that new program/projects will be formulated with the sectoral approach in mind, and thus an individual new program/project will consist of more diverse activities than currently, the estimate of three work months for each program/project initiation effort is reasonable. If 5 to 10 program/projects are initiated each year, a valid estimate is that two work years per year would be required for the ongoing activity of initiating program/projects. Regarding the 70 existing program/projects which need to be monitored, in the range of two work months per program/project would be need for a one-time effort of 140 work months. Depending upon the duration left for an existing program/project, certain program/projects might not be initiated and much less than 140 work months might be needed to develop schedules, etc., for the existing assistance effort.

The month-to-month monitoring activity can be performed by junior to intermediate level professionals, and would consist of checking with the user agency personnel on the status of individual tasks for each program/project, making appropriate changes for reporting, informing management of problems, and reviewing and storing bills and other documents in a manual file. A valid estimate is that each program/project would require two days per month of detailed monitoring activity without consideration of problems. Accordingly, one person performing the day-to-day monitoring of individual program/projects would be able to monitor 10 projects. For



the 70 existing projects, once initiated, seven personnel would be needed for detailed monitoring activities.

Program/project auditing would be performed in the range of every two years for a given program/project. A senior level professional, some one other than the individual monitoring the program/project on a day-to-day basis would be used. The program/project file would be reviewed, task and milestone performance history would be scrutinized, project sites would be visited, and meetings with user agency, USAID, and contractor personnel would take place. Existing task/milestone and funding schedules would be restudied, and, if pertinent, new schedules would be devised. The final result of an individual program/project audit would be an audit report which would be prepared both in Arabic and English. An estimate of one work month will be required for an individual program/project audit. If the number of program/projects remain in the range of 70 and a program/project is audited every two years, about three full-time professionals will be required to perform this workload during the year.

After a program/project has been completed, a final program/project completion activity should take place. Funding and bills for the total program/project would be audited, deliverable products would be checked, and the manual file would be reviewed. A complete file would be prepared for archival purposes, outstanding bills, etc. would be resolved, and an evaluation report would be developed both in Arabic and English. An estimated two work months per program/project would be required. If 5 to 10 program/projects per year are completed, one work year would be required to process complete program/projects.

Although the DECUSA management requirements are discussed elsewhere and vary depending upon factors such as organization structure, it is pertinent to describe the overall management function needed for program/project monitoring personnel. The detailed monitoring will be performed by junior to intermediate professionals who will serve primarily as liaison, preparers of reports, and initial reviewers of status information. In the event that problems and large-scale adjustments are needed in a given program/project, management time will be needed. In addition, an extensive effort in management on a continuing basis will be required to review program/project initiations, audits and completion reports.

### 3. Technical Assistance Monitoring

Many of the technical assistance monitoring activities will be covered in areas already described under feasibility studies and program/project monitoring. Technical assistance would be monitored as individual tasks in feasibility studies or ongoing program/projects. Some technical assistance monitoring will be required on DECUSA's part in relation to overall assistance strategies and use in various sectors, especially those sectors spanning the responsibilities of multiple ministries and user agencies. This monitoring effort would consist of reviewing the overall assistance effort from a technical viewpoint, and a minimum of the following fields would be considered: health, education, transportation, energy, engineering,

U.S. ASSISTANCE OVERSEAS TRAINING REPORT

Project No.	Student	Course Program	School	Training Duration		Costs	St
				From	To		
xxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxxxxxxxxxxxxxx	xx/xx	xx/xx	xx,xxx	xxxxxxxxxxxx
xxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxxxxxxxxxxxxxx	xx/xx	xx/xx	xx,xxx	xxxxxxxxxxxx
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III-11

FIGURE III-3 Training Report

finance, data processing and agriculture. In addition, DECUSA will need technical assistance in legal matters regarding contract deliveries, warranties, etc.

The overall technical assistance effort requirement will vary, and specific requirements of some of the technical assistance efforts have already been included implicitly in the program/project monitoring task. Ideally, DECUSA people with a strong technical background in the specific area of assistance being provided would develop and review schedules, and perform audits. In addition to other activities already described, at least two work years of technical assistance will be needed on a yearly basis, one work year for overall technical assistance studies and one work year for legal liaison.

#### 4. Training

Two types of training can be monitored: (1) formal training classes in specific subjects carried on in Egypt, and (2) formal education being given to Egyptians in the U.S. Formal training classes carried on in Egypt are, in fact, a form of technical assistance and should be monitored as such. In the past fiscal year, 561 Egyptians (over 2,000 since 1975) were trained in the U.S. using U.S. assistance funding. Monitoring already takes place regarding the number of students being placed, the overall curricula taken, and the schools attended.

Training provided in the U.S. is currently monitored by both USAID and DECUSA. USAID is in the process of developing an automated training monitoring system which will keep track of Egyptians receiving U.S. assistance to study in the United States. The information maintained in the USAID system would be used by DECUSA, at least initially. For DECUSA's purposes, detailed activity information will be required, and will include the names of individuals receiving the training, the time and duration of training, the type and level of training, the school involved, and the overall progress of the student. See Figure III-3 for a schematic of the training report.

DECUSA will monitor all overseas training. Requests will be screened and arrangements will be reviewed to insure that the student receives meaningful education, has a sufficient command of English, and has the necessary prerequisites for the planned curriculum. Course grades will be checked upon completion of courses. Discussions with DECUSA indicate that two people will be used full time for training monitoring.

#### 5. Funding Monitoring

##### a. Overall Discussion

The monitoring of disbursed funds is important from two standpoints: (1) the funds should be used expeditiously, and (2) the funds should be available when needed. Major concerns have been raised continually about

the "pipeline" problem in which funds are obligated in one year and are not fully spent until as long as five years later. Also, problems have been generated because necessary Egyptian funds, which had been agreed upon for certain projects, were not authorized when needed. Both of these problems could be solved, or at least alleviated by proper planning and monitoring. In addition, although the opinion is universal that U.S. assistance funding should be monitored, and DECUSA should be involved in the monitoring, a question arises concerning the level of disbursement at which the DECUSA monitoring should occur. Finally, discussions and plans for funds monitoring should address commodity funding and program/project funding differently because the funding problems of the two types of assistance are quite different and should not be monitored in the same fashion.

Upon reviewing the concerns of the pipeline problem in which funds have been obligated and not spent for a number of years, JWK has found that the problem is mainly with the funds obligated to program/projects and not with the CIP and PL-480 assistance. A part of the problem is inherent in the nature of project activity expenditures, which will extend over a number of years. Certain sequences of events or major milestones must be achieved before work, which will result in expenditures, can be even initiated. Therefore, a project activity might be proceeding on schedule, or even be ahead of schedule, yet the obligation/expenditure ratio can appear unfavorable.

JWK derived three major conclusions regarding the U.S. assistance funding monitoring: (1) the funding should be tracked monthly, (2) CIP and program/project funding are different and should be tracked differently, and (3) for future spending estimates for program/project should be made on a monthly basis and tracked at program/project initiations against actuals. Because CIP (and PL-480) funding monitoring has different requirements than program/project funding monitoring, the funding monitoring of the two types of assistance are discussed separately below.

b. Discussions of Different Types of Funding Monitoring

(1) Program/Project Funding Monitoring

As discussed previously, funding for program/projects will be monitored by comparing planned versus actual expenditures. At initiation of a program project activity, a spending plan with overall estimates of monthly spending would be devised, and future actual expenditures would be tracked against these every month. Although such monitoring would not directly cause expenditures to be accelerated, it would serve to explain the reasons for the delay in expenditures. Also, the criticality of individual milestone completions would be emphasized, and this method would provide insight into the specific priorities of monitoring individual project activities.

The monitoring would be performed by DECUSA which would prepare a report for each active program/project on a monthly basis depicting planned versus actual spending. See Figure III-4 for a representative type of



program/project funding report. This report would be produced in conjunction with the program/project execution monitoring report. In addition to detail reports, summary funding reports would be produced specifying funding information (planned versus actual) by user, agency and by extent of variance.

c. Commodity and PL-480 Funding Monitoring

Regarding commodity and PL-480 expenditure monitoring, detailed expenditure tracking is currently performed by the commercial Egyptian banks which disburse funds to American banks. When an agreement has been formulated by the U.S. and Egypt for assistance, the funding for the overall agreement (currently monitored with a specific agreement number) is segmented into allocations for individual ministries and commercial Egyptian banks, with a separate letter of commitment for each ministry using a single bank. When procurement contracts are awarded, a letter of credit will be issued by the Egyptian bank to a designated American bank, which will allow contractors to spend against the letter of credit. Many letters of credit may be issued against a single letter of commitment. Many of the expenditures for a letter of credit for shipping costs are not controlled by Egypt, because such costs are paid for differently, depending upon whether the ship is a U.S. or foreign carrier.

DECUSA will track funds at the letter of credit level of funding. Two general milestones exist for cost expenditure of commodities against letters of credit for goods and shipping. They are: (1) when commodities have been loaded on the ship or other carrier, the expenditure is made for the goods; and (2) when the shipment has been unloaded and inventoried, the shipment expenditure is valid. Because many of the letters of credit can refer to huge cargos, multiple shipments may take place, and each shipment may constitute an expenditure milestone. With professional talent in the U.S. and Egyptian banks already tracking the detailed funding of letters of credit and letters of commitment, it does not appear that problems will arise on overspending obligated amounts. DECUSA would receive invoice copies from the banks for individual expenditures, which ministry personnel will have already checked for the validity of those expenditures. On a monthly basis, DECUSA would monitor the overall delivery of commodities, assess the rate of expenditure of each active letter of commitment, and check individual bills for applicability.

The funding monitoring of commodities and PL-480 assistance will be performed directly in conjunction with the commodity distribution monitoring, and two commodity distribution reports (one in English and one in Arabic) prepared monthly will contain commodity funding data on long-standing letters of credit. In contrast to the recommended practice of developing planned monthly expenditure schedules for individual program/projects, no such recommendation is set forth for commodity agreements or PL-480 assistance. The pipeline problem for commodity spending is not extensive, and projections of spending can be generally estimated from reviewing the date of issue of a letter of credit.

d. Local Funding Monitoring

As mentioned, Egyptian funds for individual projects are allocated separately from American assistance funds, and monitoring must take place to insure that sufficient Egyptian funds have been allocated in the current fiscal year as agreed upon in a prior year. Also, because the U.S. will not pay for foreign carrier transportation, and the carrier's nationality will only be known at the time of procurement, sufficient Egyptian funding should be monitored to allow for contingencies in commodity shipping. Local funding is related only to program/projects, and will be specified separately on the program/project funding reports. On a monthly basis, checks would be made to determine whether specified local funding has been made available by the Egyptian government.

e. Personnel Requirements

Much of the funding monitoring work effort will be performed in conjunction with the performance and execution monitoring. Certain efforts will be required in collecting the detailed funding information from USAID and the banks, and producing report information. Also, monthly funding reports would need to be reviewed from a standpoint of overall pipeline considerations. Finally, at least one individual will need to maintain a continuing relationship with various Egyptian banks to solicit loans for private sector firms and to manage letters of commitment. Review of the workload and discussions with DECUSA indicate that three personnel would be needed to perform all the functions involved in banking liaison and funding monitoring/reporting.

#### IV. DISCUSSION OF ALTERNATIVE OPERATING ENVIRONMENTS

##### A. Initial Conclusions and Determinations

A JWK review of the U.S. Assistance Monitoring Requirements and the current DECUSA operating environment and overall guidance provided by DECUSA has resulted in four initial conclusions and determinations: (1) DECUSA has insufficient staff to perform its function adequately, (2) the current DECUSA office space is not large enough to house the future personnel needed to perform the future workload, (3) DECUSA has provided recent guidance for its future overall organization structure and that structure will be used as the basis of development of a detailed organization chart, and (4) DECUSA will need to install an archival data reduction and retrieval capability at some time in the future. These four conclusions and determinations will have a major impact in the analysis to derive a future DECUSA operating concept. Also, they will affect any decisions on alternative approaches in the future operational environment. Each conclusion and determination area is discussed separately below.

##### 1. DECUSA Staff Conclusions

Currently DECUSA has in the range of 20 professional and 10 administrative personnel. The 20 professionals include management personnel, as well as those people performing the actual detailed monitoring activities. In the future, the DECUSA personnel complement will change dramatically if DECUSA undertakes the U.S. assistance monitoring requirements set forth in Section III of this report. The number of personnel in the future complement will depend upon whether or not automation support is used in supporting the requirements defined in Section III; however, it is applicable to review personnel requirements from the point of view of not using automation and use that figure for comparison purposes with a personnel complement performing the same general functions with automation support. The personnel complement for the future DECUSA operation without automation support is 76, and is segmented into three types of personnel in the following breakdown. (1) non-management professionals - 42; (2) management - 8; and (3) administrative - 26. The complement rationale for each type is described separately below.

##### a. Non-Management Professional Complement Rationale

Section III of this report describing monitoring requirements, indicates that 37 professional non-management personnel will be required to perform all U.S. assistance monitoring activities recommended by JWK. The functional work year breakdown is summarized below:

<u>Monitoring Function</u>	<u>Non-Management Professionals</u>
● budget preparation	- 4
● feasibility studies	- 3

● commodity distribution (including PL-480)	- 10
● program/project status	- 13
● technical assistance	- 2
● training	- 2
● funding	- <u>3</u>
total	<u>37</u>

In addition to the 37 professionals needed to perform the above functions, five other non-management professionals will be needed to perform non-monitoring functions such as raising funds for private sector loans from banks, and promoting trade between the U.S. and A.R.E. Discussions with DECUSA indicate that five non-management personnel will be required to perform such functions. By adding this personnel requirement to the estimate of monitoring non-management professionals, the total requirement for non-management professionals is 42.

b. Management Complement Rationale

Management/supervisor personnel will be needed to manage/supervise the 42 non-management professionals. Typical "textbook" guidelines for management requirements indicate that a general ratio for direct management of professionals is in the range of six to one. Valid variances to such a ratio depend upon the type of work involved, specific organization structure, and proximity of people managed; however, the six to one ratio is a reasonable guideline in respect to DECUSA functions, and about seven direct management/supervisory personnel should be needed to manage the 37 professionals. Also, when the count includes the Senior Undersecretary in charge of DECUSA, the number of supervisory personnel totals eight, and the number of professionals required for DECUSA will be in the range of 50. The estimate of 50 professionals for the future DECUSA was derived partially by using a generalized management ratio, and JWK used that estimate only as a checkpoint after an organization structure was derived to ensure reasonability of the organization structure and future complement. As the analysis progressed, this initial estimate of 50 professionals remained valid even when different alternative approaches were considered.

c. Administrative Complement Rationale

The future number of administrative personnel (i.e., typists, secretaries, etc.) required for DECUSA will vary depending upon organization and possible automation support available. If the current DECUSA two to one ratio of professional to administrative personnel is applicable to the future DECUSA administrative personnel requirements, 25 administrative people would be needed in the future DECUSA organization. In addition, data reduction/retrieval functions not currently performed would add an additional administrative person for a total of 26 administrative people. This figure is at best a general estimate which can only be used if the

assumption is valid that the same administrative structure and practices as presently are maintained.

#### d. Reasons for Complement Increase

The increase of people from 30 to 76 can be attributed to six additional functions not currently being performed by DECUSA: (1) extensive detailed budget preparation, (2) development and preparation of both detailed and summarized monthly activity status and funding reports, (3) periodic auditing of all program/projects, (4) technical assistance and technical assessment of the U.S. assistance activities, (5) after-the-fact checking on the use of commodities, and (6) data reduction of historical information. The figure of 76 personnel does not include the one-time-only work efforts necessary to develop procedures and guidelines specifying actions in the new monitoring functions, but only includes the work effort required for the future on-going monitoring activities.

#### 2. Office Space

The current DECUSA office space at 8 Adley Street in Cairo is totally inadequate to house the office staff needed to perform the future DECUSA requirements. Besides space for personnel, the future space will need sufficient power facilities for data reproduction and data reduction equipment. This type of equipment will require other-than-normal office electric power. Also, if the alternative to use computer equipment for word processing and data processing functions is implemented, power requirements will exceed the limits at 8 Adley Street.

DECUSA has indicated its intention of obtaining new office space; however, the specific space location and characteristics are not known. It appears that the new DECUSA office space should be in the range of two to three times the size of the present space, should have sufficient electric power to support advance data reproduction and reduction equipment, and if computer equipment is to be used, should have central air conditioning.

#### 3. DECUSA Organization Structure Considerations

There are four different approaches to organize DECUSA: (1) by sector of assistance activity, (2) by functional type of work, (3) by organizational liaison with USAID, and (4) by combinations of the first three. DECUSA has elected to be organized by type of liaison, by functional type of work, and within type of liaison by sector. In effect, DECUSA will be organized by the fourth listed approach.

The future DECUSA organization has certain similarities with the current USAID organization structure, and will consist of three professional groups and an administrative support group. The three professional groups

will be headed by an Undersecretary, one of whom will also act as second in charge to the Senior Undersecretary for Economic Cooperation with the United States, who will be in charge of DECUSA. DECUSA has elected to have a two-level hierarchy within the department, with the professional groups designated as "Central Directorates" and subordinate groups within central directorates designated as "Divisions". The administrative support group will be a division reporting directly to the Senior Undersecretary.

Regarding the functions of individual groups, the first Central Directorate will consist of those people performing direct U.S. assistance monitoring on activities also monitored by USAID, the second Central Directorate will perform liaison with groups other than USAID, and the third Central Directorate will perform overall U.S. assistance monitoring professional support functions. The fourth Administrative Services Division will perform typing services and other administrative support. The detailed structure and distinct functions of the total future DECUSA organization is described in the next section in detail and includes ramifications of the recommended alternative to have automation support.

#### 4. Data Reduction and Retrieval Capability

As the repository of information for U.S. assistance to Egypt, DECUSA will need to produce microfiche or some other data reduction medium of all bills of lading, letters of commitment, letters of credit, agreements, status reports, project papers, feasibility and other management studies, shipping documents, etc. The documents will need to be reduced in a number of sequences--more specifically by type of activity, by program/project or agreement number, by type of document, by time of creation, and by user agency. Multiple versions of the same microfiche media will be required.

This capability is not needed immediately because the documents can remain in hardcopy form for some time in the future; however, provisions have to be made for data reduction storage because size of storage will become unwieldy within a few years if no steps are taken to reduce the physical size of the storage. Also, accessing the data will become cumbersome in the future as the amount of U.S. assistance related information grows and only one copy of a specific piece of information is available. Accordingly, multiple copies of information in different sequences will be required in reduced form.

### B. DECUSA Operational Alternatives Considerations

#### 1. Overall Discussion and Summary

Sufficient information and guidance is available about the future DECUSA operating concept and environment so that a future operation can be defined at a fairly specific level of detail, with the exception of one consideration--whether or not DECUSA will have an automation capability to perform

word processing and data processing functions. DECUSA could perform such functions, defined in Section III, either in a totally manual fashion or with automated support. The trade-off of which alternative approach to use is a comparison of initial development and continuing equipment operation costs, along with a highly increased capability, versus additional manpower and less capability.

An analysis of the DECUSA reporting requirements indicates that an automated capability to support data processing reporting requirements definitely would be highly beneficial to the DECUSA operation and most probably would be the only effective method to satisfy its reporting mission on a monthly cycle. In addition to providing necessary reports by using less people in less time than in a manual operation, the accuracy in the maintained information would be increased dramatically because the actual data figures would be obtained directly from USAID in machine-readable form rather than being retyped manually for incorporation into reports. Also, much of the actual reporting information varies in content from month-to-month only in detail allocation and expenditure figures which are displayed, and summarized with earlier totals for the same assistance activity. These figures are also summarized in various ways for different management reports. Such processing characteristics are natural applications for automation as demonstrated by the fact that USAID already has an automated capability installed. Finally, a non-typical reporting requirement which DECUSA has is the preparation of status and funding reports in both English and Arabic, with the same information contents. The use of a computer system to develop reports in both languages by storing static textual fields in both languages, and translating funding fields and status codes as needed, will serve to provide an automatic translation vehicle.

The other potential benefit of automation support would be in the area of word processing. DECUSA currently has a typing pool of 10 clerical personnel for memorandum and textual report development, and the employment of additional professionals will require additional typists in the pool. The use of a typing pool is the most effective method to use automated word processing support effectively. DECUSA has such an organization intact, and will need an increase in clerical personnel in the future. This future need could well be satisfied by the installation of an automated word processing capability which could increase current typing staff productivity by as much as 100%. In addition to the increase in personnel productivity, memoranda reports will be produced faster, and adjustments will be made without total retyping.

The drawbacks to using automation consist of additional costs needed for development, installation and operation of equipment and related computer software. Although not all costs associated with a future automation capability are known at this writing (especially site preparation, power costs, software development, etc.), a valid estimate is that over a seven year life cycle an amortized cost in the range of \$7,000 or LE 5,833, will be spent per month. The use of automation will also require additional use

of power, and the installation of an uninterrupted power source and air conditioning in DECUSA's offices. The current DECUSA space is definitely inadequate and cannot be used for an automated operation.

## 2. Description of Automation Alternative

### a. Selection of Specific Automation Alternative

Initially, three different automation alternatives were considered: (1) providing a small batch automation capability, installed at DECUSA, which would be used to produce U.S. assistance status and management reports, (2) using a computer facility of another organization to perform the U.S. assistance status and management reporting function via remote terminal entry, and (3) using a minicomputer system to perform both data and word processing. The first alternative was not considered as a serious candidate because it did not take into consideration the processing of the large textual portion of reports which must be developed in both English and Arabic, and did not even consider the word processing function currently being performed, which will most assuredly increase in the future. Also if computer equipment is to be procured, installed and maintained, and software is to be developed, such an effort might not be justifiable solely for a monthly reporting operation. With the use of word processing automation assistance on a daily basis, installed equipment at DECUSA becomes a valid alternative.

The second alternative was not considered, primarily for reliability considerations. The extent of power shortages and the typical unreliable quality of telephonic transmission in Cairo would cause the continuing availability of remote facilities to be so tenuous that the alternative was dismissed. The power problems in Cairo are both scattered and spasmodic, and the reliance of power availability at both DECUSA and a remote facility would double the typical Cairo power outage experiences (normally several outages a day). Even if the power supply problem could be solved, the level of erratic noise typically experienced in the Cairo telephone system would cause the consideration of using remote facilities to be impractical.

For the reasons above, JWK only seriously considered the third mentioned alternative as a valid approach, that of installing a computer system in DECUSA offices which would be used for both word processing and data processing assistance.

### b. Description of Automation in Future DECUSA Operation

In the selected automated approach, an American minicomputer system would be installed in air conditioned DECUSA facilities which would be used on a daily basis to support word processing functions. The minicomputer would be attached to an Uninterrupted Power Supply (UPS) capability which would allow the computer system to operate during the occurrence of

short power outages under one-half hour. Besides display terminals, which would present both English and Arabic characters concurrently on the screen, the computer system would have two multi-language printers which would have both English and Arabic fonts. All memoranda would be prepared by typists on the display terminals (both English and Arabic memoranda) and listed on the printers for scrutiny by the memoranda originators. Corrections would be given to the typing pool terminal operator who would call up the previous version of the memorandum and make the designated changes and print the adjusted version. Notices to all user agencies would be made by typing one version of the notice with provisions to specify varying fields, such as project officer, user agency and address, time, etc. in the body of the notice. The notices would be prepared by keying in only changed fields, and printing the completed notices using the word processing capability.

On a monthly basis, DECUSA would receive U.S. assistance status and funding information from the user agencies and the banks. The commodity distribution status and training data would be received from USAID in machine-readable form. On initiation of the activity, project and agreement information would be input to the computer system, with text fields in English and Arabic. The computer data base would be updated with the new information, and the appropriate Arabic and English reports discussed in Section III of this report would be produced.

#### c. Computer Equipment Availability

During the study, JWK spent sessions with different computer equipment manufacturer representatives in Cairo to determine the availability of suitable computer equipment. The combined requirements of a computer system to be able to support word processing and data processing in both Arabic and English caused most of the American computer manufacturers to be eliminated from consideration. Two companies were found which can supply computer equipment, related software, and maintenance in Cairo, Egypt, in the near future and which would satisfy DECUSA's automation requirements discussed above. See Appendix B for JWK findings on computer manufacturer capabilities. Also, the two companies can provide equipment which will interface with the Wang computer system at USAID and accept Wang generated data. Accordingly, the computer equipment to support DECUSA's automation candidates is available.

Because multiple vendors can supply the equipment and services needed, a sole source contract arrangement is probably not applicable; however, strong benefits may be gained by procuring Wang equipment which is totally compatible with USAID equipment. Because Wang Arabic word processing software will not be available for use until March 1983, the justification for a sole source contract might depend upon the delivery schedule for future equipment installation in new DECUSA office space.

Because the stringent requirements of having both word processing and data processing on the same computer system producing both Arabic and English have restricted the number of available computer manufacturers, it is pertinent to discuss that combination of requirements in detail. A number of benefits of having both word processing and data processing on the same computer system are not immediately apparent in the discussion above. First, when data is being prepared for word processing, procedures can be initiated to "capture" the data for later use for data processing reports. As a result, the tasks of data preparation and proofing of program/project objectives, description and status, done to create a memorandum to a user agency will not need to be performed again to convert that information into computer readable form, because the same information will be saved directly for data processing use. The fact that USAID prepares such data in English on word processing equipment which can be captured in a data processing format allows the possibility of a procedure to be developed to accept data actively prepared by USAID in machine readable form for DECUSA data processing input. Second, the same computer equipment used throughout the month to support word processing functions will be used at night on the final weekend of the month to process the U.S. assistance status and management reports. In effect, the monthly reporting function will not require unique computer equipment.\*

#### d. Personnel Complement Using Automation

Concerning the personnel needs for a future DECUSA organization using automation support, JWK analyzed individual personnel functions and was able to derive a general estimate. With an automation capability, the estimated 50 professionals discussed in earlier paragraphs will not change. Reviewing the organization structure and word processing requirements of the future DECUSA, JWK estimates that 17 administrative personnel will be needed. The estimate is broken down as follows: four clerical secretaries (one for each undersecretary), ten typists in a typing pool or secretarial support group, to perform all memoranda and other textual report preparation, one person to perform report reproduction and archival data reduction functions, and two people to perform direct computer-related functions.

The estimate of a need for ten typists was derived from three facts: (1) a word processing capability will increase the productivity of the current typists by as much as 100%, (2) much of the increased reporting information will be captured from data already prepared in machine-readable form, and (3) many changes in status and funding figures would not require heavy typing and would be performed by junior level professionals rather than being delegated to the typing pool.

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\* The only possible exception to the need for additional equipment for reports is the possibility of incorporating a graphic output device to produce charts, etc.

The two additional computer support people would oversee the day-to-day word processing automation operation, maintain automated data files, prepare status and other report data to be received by the data processing function, and actually produce the monthly status and management reports. It must be stated that the two additional administrative personnel needed for the automation support will not be juniorlevel people. These people will have an understanding of data processing, and at least one of the people will have a background in computer programming. In summary, the total number of DECUSA people estimated to perform the future U.S. assistance monitoring activities with automated support is 67, with a breakdown of 50 professional and 17 administrative personnel.

e. Cost Analysis

Regarding costs associated with this alternative, a number of unanswered questions arise which can allow JWK to develop only a general estimate for the overall cost for an automated word processing/data processing capability. The following costs are applicable: (1) computer equipment costs, (2) UPS equipment costs, (3) systems analysis and software development costs, on-going equipment maintenance, and power requirements. JWK did not include a number of costs which are usually attributed to computer capabilities. They are: installation costs, training costs, direct operator personnel costs, space costs, and air conditioning equipment. These latter costs are either not known or would also be applicable or accounted for in the manual approach and consequently are not pertinent. Because certain costs are one-time only expenses, and others are recurring costs, JWK developed cost estimates as an average monthly cost with an amortization over a seven year life cycle for one-time only expenses. By developing a monthly average cost for the automation capability, and comparing that cost with cumulative monthly salary costs for additional personnel needed in the manual alternative approach, a general type of valid cost comparison can be made to determine whether one alternative costs appreciably more than the other.

In respect to one-time capital investment in costs for the automation alternative, JWK solicited information from several computer vendors in Cairo, Egypt, and received a wide variety of options for various computer equipment configurations. A conservative estimate is that the computer equipment costs to support 10 concurrent word processing terminal operators and all data processing requirements is about \$150,000 to \$200,000. Also, the purchase price for adequate UPS equipment able to sustain one-half hour operation of the computer equipment is in the range of \$50,000\*. The estimate for computer systems analysis and software development costs are

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\* This figure includes sufficient power for the operation of reproduction and data reduction equipment, along with computer equipment for one-half hour.

are difficult to assess because the existing software capability provided by the specific computer equipment vendor will only be known at the time a specific vendor is selected. Also, systems analysis will be required for both the manual and automated alternatives. Only additional analysis required for the automated alternative should be considered as part of the automative alternative costs. A valid, but conservative, estimate is that in the vicinity of \$250,000 will be needed for systems analysis and software development costs associated strictly with implementing the automated alternative approach. In summary, one-time costs pertaining to the automated alternative are in the range of \$475,000 or LE 395,000.

Recurring costs will consist of monthly payments for equipment maintenance and power requirements. The typical computer equipment maintenance costs stated in Cairo by solicited computer vendors is 10% of the purchase price per year. Accordingly, \$15,000 per year or \$1,250 per month will be spent in computer maintenance costs. Although power costs are difficult to assess because the actual equipment to be used is not known, a figure of \$250 per month is applicable for computer systems of the size being considered. This figure includes air conditioning and UPS power requirements. In total, the recurring monthly costs are \$1,500 or LE 1,800 per month.

The total monthly cost can be obtained by amortizing the one time costs over seven years or 84 months and adding the amortized factor to the recurring costs. The one-time cost total, amortized on a monthly basis, is about \$5,650. If this figure is added to the monthly recurring cost of \$1,500, the total \$7,150 monthly cost is obtained. This figure does not consider a number of factors, some of which counterbalance each other. These factors are: cost of money, residual value of equipment, paper, magnetic disks and tapes, manuals, etc. With such factors in mind, it is valid to increase the estimate to \$7,200 or LE 6,000 per month. It must be emphasized that the LE 6,000 monthly cost is a very general estimate and should only be used for broad comparative analysis evaluation.

### 3. Description of Manual Alternative

The manual alternative approach would consist of increasing the current DECUSA staff with both professional and administrative personnel to satisfy the U.S. assistance monitoring and management reporting requirements. All memoranda and other reports would be typed on standard typewriters, and revisions would be made by retyping entire pages or making manual corrections to the most recent typed version of the memorandum or report.

Regarding the production of U.S. assistance status and management reports, each month the incoming data would be received, and previous reports would be copied with the new information calculated and incorporated into an up-to-date report. The commodity distribution status and training reports would be received from USAID, program/project status

reports would be received from user agencies, and expense funding information would be received from the banks just as in the automated alternative approach. The data would first be collected for each assistance activity and the previous monthly status and funding reports would be updated in draft form with the current month's data. New reports would be prepared, and summary reports would be manually calculated and prepared from checked-out updated status reports.

Possible variations to the operation described above could be enacted. USAID computer equipment could perform certain calculations regarding commodity distribution totals. A microcomputer could be employed to develop summary totals for management reports. Banks might provide, in addition to detailed data, summary funding information to alleviate the extensive calculations which would be required for management reports. In any event, the data from many sources would have to be collected, updated, correlated, and synthesized to produce detailed reports on specific program projects and agreements. The calculations needed for summary management reports would have to be totally developed each month because the figures of the corresponding existing reports for the previous month would be the cumulation of many figures which would change from month to month.

In regard to producing budget planning reports by manual means, it would appear practical first to use general estimates for new assistance candidates to be added to existing assistance figures for overall summary reports. To produce new management summarization for various potential budgets would require too much effort in a manual mode of operation if a large number of alternative plans were to be considered.

The number of DECUSA personnel to be used to perform the requirements described in Section III would be a minimum of the 76 people previously discussed in the initial conclusion paragraphs in this section. In the estimate of 76 people, no consideration was given to additional time which would be required of professional personnel to proof totally retyped memoranda and reports rather than proof changes made, as in the automated alternative. Also, two professionals will be needed to coordinate and check monthly reports being produced to insure at least some degree of accuracy. A valid estimate is that a total of 80 personnel would be required by DECUSA to perform its mission, with a split of 53 professional and 27 administrative people.

### C. Comparative Analysis of Alternatives

In comparing any two valid alternative solutions to satisfy a requirement, the comparison ultimately results in matching additional costs versus additional benefits. In the alternative cost comparison of automation versus totally manual support for DECUSA to perform its future mission, the costs of purchasing, installing, developing and maintaining an automation system are to be compared against personnel costs for 10 additional

administrative and 3 professional employees. In an American working environment, with employees being paid American wages, the total employee cost to sustain 10 typist personnel and three junior/intermediate level professionals is in the range of \$21,750\* or LE 18,125 per month. The LE 18,125 figure, when considered as the additional monthly cost of the manual alternative, compares quite unfavorably to the LE 6,000 additional monthly cost of the automated alternative. However, Egyptian salaries are lower than American salaries, and the automated alternative cost includes capital investment expenditures for which a cost-of-money factor should be applied. These two factors would cause the relative costs of the two alternatives to be nearly equivalent. It is certainly valid to state that the additional costs of the automated alternative are definitely not higher than the additional costs of the manual alternative, and most probably the long term costs of the automation alternative will be less than the manual alternative.

The drawbacks against DECUSA selecting the automated alternative relate to timeliness of implementation and additional installation requirements. Regarding timeliness of implementation, equipment will have to be selected and procured, DECUSA will have to move, from its current space, software will have to be developed and equipment will have to be installed in new office space. These activities will require time, and the automated alternative will not be implemented as fast as the manual alternative approach. Concerning additional installation requirements of the automated alternative, the current DECUSA office space cannot house computer equipment, which requires at least some type of air conditioning. In addition, power requirements of the computer and related equipment may require that DECUSA office space have special installation provisions. Finally, software will need to be developed and automated procedures will need to be prepared specifically for the DECUSA automation operation. It is pertinent to point out that the functional drawbacks to the automated alternative relate to startup considerations and not to any weaknesses in continuing operations. It is in the ultimate DECUSA operation when the automated alternative realizes a "pay-off".

Aside from a potential cost saving due to reductions of possible future personnel, DECUSA will realize benefits in three areas: (1) timeliness of reporting, (2) accuracy of calculations and reporting information, and (3) quality of technical report and memoranda presentations. The most important benefit is that DECUSA will be able to produce status and management reports on a monthly cycle without concern that the reporting effort will require

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\* This figure was derived using salaries of \$12,000 per annum (p.a.) for bilingual typists and \$18,000 p. a. for junior/intermediate level bilingual professionals. An overhead factor of 50% was used for administrative factors, benefits, etc. See algorithm below:

$$(10 \times \frac{12,000}{12} + 3 \times \frac{18,000}{12}) \times 150\% = \$21,750 \text{ monthly}$$

so much time to produce that the report information will be over a month late by the time it is received by the recipient. Regarding the preparation of budget reports, the timeliness benefit of using a computer system is extensive, and indirectly would provide decision-making prerogatives to upper echelon government not available with the manual alternative. Although the development time savings for memoranda in using automation assistance will not be quite as dramatic as that gained in preparing the monthly status and funding reports and the budget planning reports, at least one day will be saved in developing a given memorandum with the use of word processing equipment. Regarding accuracy, the possibility of making errors is an order of magnitude higher in transcribing information and performing manual calculations in the manual alternative than capturing data in computer readable form and performing all calculations using a computer. Because of the ease of making changes to memoranda and technical reports using automated word processing assistance, the quality of those documents will be better because the preparer of the document will be more inclined to make minor corrections, knowing the effort in making the change is minimal.

#### D. Recommendation and Rationale

Although all the necessary detailed costing information is not available to perform a highly accurate cost benefit analysis of whether or not DECUSA should use automation in its future operation, sufficient information is known for JWK to make a strong recommendation in favor of the use of automation. It appears that the long term costs are favorable to the use of automation and the long term benefits far outweigh any short term problems in installation of computer equipment and implementation of an automated system.

With the implementation of an automated system, DECUSA will be able to respond more effectively in developing memoranda and technical reports, preparing accurate activity status and funding reports for user agencies and USAID, and deriving an accurate budget in a timely manner. The image of the pipeline problem in U.S. assistance spending and the gradual evolution to sectoral funding required that DECUSA perform its monitoring functions as effectively as possible. Automation will allow DECUSA to perform its mission more efficiently.

## V. RECOMMENDED DECUSA OPERATING CONCEPT

### A. Overall Description

The future DECUSA organization will consist of 67 people, housed in new office space, with access to a minicomputer installation which will provide assistance in word processing and data processing functions. The future DECUSA organization will work in integrated coordination with USAID to perform U.S. assistance monitoring, and will be heavily involved in the following monitoring activities: direct liaison with user agencies, detailed budget preparation and coordination, monthly U.S. assistance activity status and funding monitoring, monthly reporting of assistance activities in both English and Arabic, after-the-fact checking of commodity use, periodic audits of program/projects activity performance, close liaison with Egyptian banks to obtain private sector funding, and monitoring of overseas training. The relation between DECUSA and USAID will be closely related, and all U.S. assistance status reports developed by DECUSA in Arabic for user agencies will also be prepared in English for USAID. In addition, commodity distribution status, training information, and program/project related data developed by USAID will be received by DECUSA in computer readable form for monthly report preparation.

The future DECUSA operation, as envisioned by JWK, would contain a number of new activities not currently performed by either DECUSA or USAID regarding U.S. assistance monitoring. In the future, program/projects, upon initiation, would be analyzed from the standpoint of planned execution, and both a task/milestone completion schedule and funding expenditure plan would be devised. Monthly status monitoring in relation to original schedules and plans would be performed, and reports would be prepared. DECUSA would also perform periodic audits of specific program/projects. Another major activity not now performed which DECUSA will take on in the future will be the detailed budget preparation and coordination effort in which the installed computer system will play an important role. DECUSA will develop many different reports at both the detailed and summary level for multiple budget proposal variations. Also, DECUSA will serve in a truly liaison role in the future with USAID and American contractors on one side and Egyptian user agencies and government management on the other, by acting, in effect, as a translation vehicle by producing reports in both Arabic and English, and translating English descriptions into Arabic for report presentation. Finally, in another totally new function, DECUSA will act as an archival library for historical U.S. assistance documents and will reduce information documents to microfiche (or other miniaturized) form for historical reference purposes.

The future DECUSA physical office space and operating environment will be quite different than currently. The space will need to be air conditioned so that the future computer system and other electrical equipment will perform satisfactorily. The computer system will consist of a central processing unit, computer memory disk storage, a magnetic tape unit, at least two line printers, two letter quality printers, and 10 Cathode Ray Tube display terminals. The terminals and letter quality printers will be situated in

an area dedicated to a typing pool. The computer system will be attached to an Uninterrupted Power Supply (UPS) unit which will allow continuing operation to occur for up to one half hour in the event of a power failure. Also attached to the UPS unit will be air conditioning, the data reduction equipment, and document reproduction equipment. The future DECUSA office space will be in the range of three to four times the size of the current office space in size.

## B. Organizational Structure

### 1. Overall Description

The future DECUSA organization will consist of 67 people, will be structured into three central directorates and an administrative services division, and will be managed by the Senior Undersecretary of Economic Cooperation with the United States of America. The Senior Undersecretary will be the administrator of the entire department. The three central directorates within DECUSA each will be managed by an undersecretary. Those central directorates are: (1) Central Directorate for USAID Assistance, (2) Central Directorate for International Economic Cooperation, and (3) Central Directorate for Technical Services. The Administrative Services Division will report directly to the Senior Undersecretary. Of the 67 people, 50 will be technical professional personnel and 17 will be administrative personnel. Of the 49 technical professionals in addition to the Senior Undersecretary, 24 will be in the Central Directorate for USAID Assistance, eight in the Central Directorate for International Economic Cooperation, and 17 will be the Central Directorate for Technical Services. The administrative personnel will include four clerical secretaries (one for each of the four undersecretaries), 10 typists providing secretarial support in the typing pool, and three data processing/data reduction people in the Management Information Center. See Figure V-1 for the structure of the future DECUSA organization. In Figure V-1, subordinate divisions are depicted under each directorate, and under subordinate divisions are listed functions of concern, and/or liaison with specific or types of organizations. The items listed are to provide the reader with an insight into the functions of the various divisions. Planned functions of subordinate divisions are discussed in detail in paragraphs following.

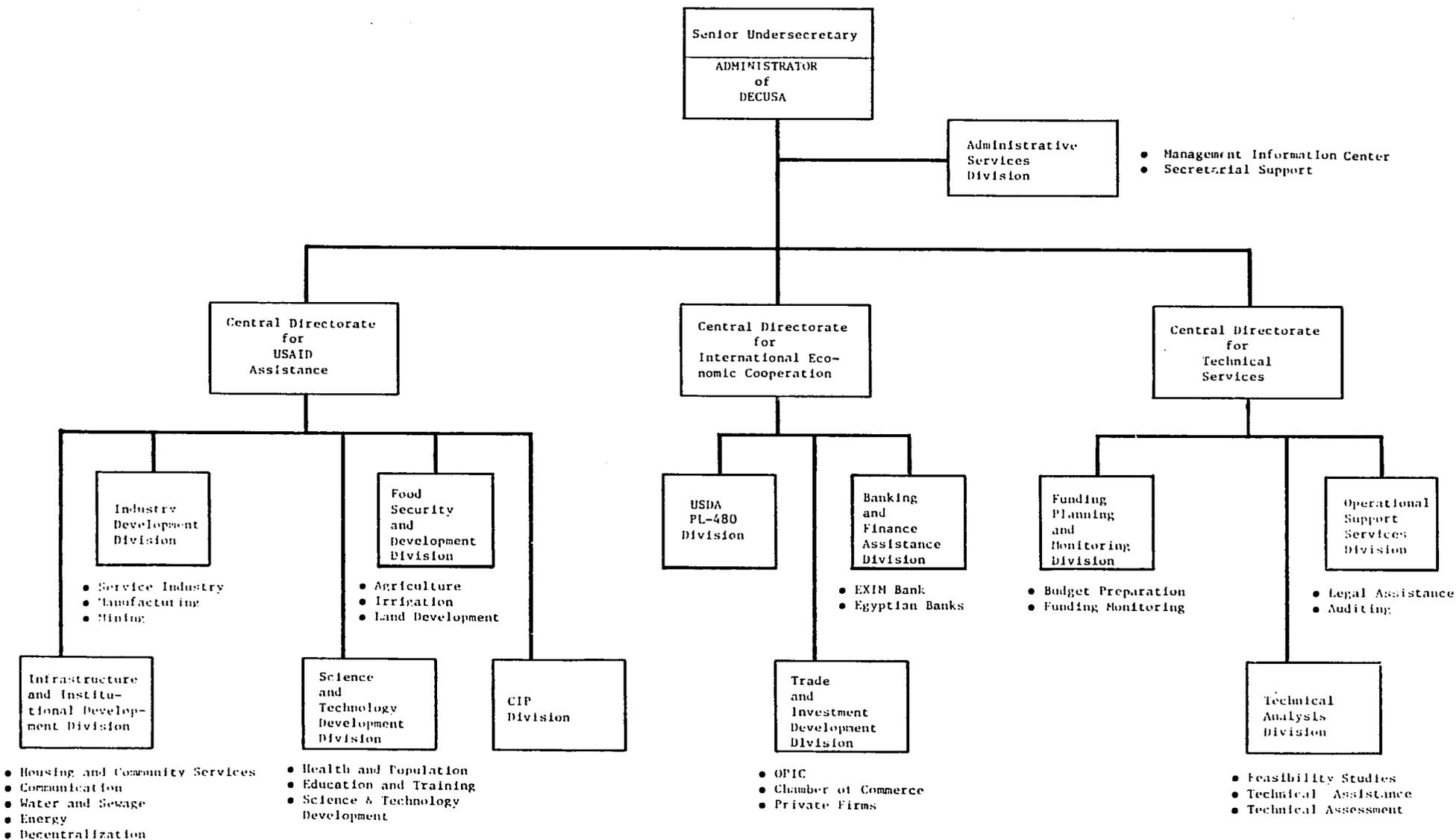
### 2. Discussion of Subordinate Organization Groups

#### a. Central Directorate for USAID Assistance

This central directorate will consist of 24 professionals and a clerical secretary, and will perform all monitoring of U.S. assistance also being monitored by USAID. The central directorate will be broken down, as currently envisioned, into five separate divisions. One division will be concerned totally with CIP assistance monitoring, and will have eight professional monitoring personnel and a supervisor. The remaining four divisions will constitute separate groups for separate sectors and combined will have 14 personnel. The 14 personnel will consist of 10 professional monitors and 4 supervisors, one for each sector division. The four sector divisions

FIGURE V-1  
 FUTURE  
 DEPARTMENT OF ECONOMIC COOPERATION WITH USA  
 ORGANIZATION CHART

V-3



envisioned by JWK are: (1) Food Security and Development Division, (2) Industry Development Division, (3) Infrastructure and Institutional Development Division, and (4) Science and Technology Development Division. Professional monitor personnel will be assigned to the individual offices as needed by the specific number of program/projects being monitored.

b. Central Directorate for USAID Assistance

This central directorate will consist of 24 professionals and a clerical secretary and will perform all monitoring of assistance and liaison not related to USAID. In addition to the PL-480 Division with two personnel, two divisions will be included: the Trade and Investment Development Division, with three people, and the Banking and Finance Assistance Division, with two people. The Trade and Investment Development Division will meet with private sector businessmen and industry people from both Egypt and the United States in an effort to promote trade between the two countries. The Banking and Finance Assistance Division people will perform all liaison with Egyptian and the export/import banks to obtain financing for private sector businesses to use U.S. assistance, and to critique the services provided by these banks. The undersecretary responsible for the directorate will perform the day-to-day supervision of the seven professionals and the clerical secretary.

c. Central Directorate for Technical Services

This central directorate will include 17 professionals and a clerical secretary, and will provide technical assistance for the Senior Undersecretary and the other two central directorates within DECUSA. The 16 professionals, besides the undersecretary responsible for the central directorate, will all be involved in a variety of different functions. Although JWK has derived the manpower estimate by the yearly effort required of certain functions, personnel will be spread over those functions as needs arise. One function assigned to this central directorate is auditing of program/projects. The reason for this assignment is a method for insuring a totally objective audit. The yearly manpower allocation estimate is as follows (in work years): budget preparation - 4; technical assistance - 2; legal assistance - 2; training monitoring - 2; funding monitoring - 3; auditing - 3.

With 18 personnel in this central directorate, a subordinate breakdown is needed to insure proper management of the wide variety of functions and personnel. Accordingly, JWK recommends three divisions: (1) Funding Planning and Monitoring Division, responsible for budget preparation and funding monitoring, (2) Technical Analysis Division responsible for scrutiny of all feasibility studies and other technical assessment functions, and (3) Operational Support Services Division, responsible for providing legal assistance and auditing. The assignment of personnel in this central directorate to subordinate divisions will be quite flexible with shared individuals performing functions for multiple divisions concurrently. Each division will have a person assigned who will be responsible for the specific functions of the division.

d. Administrative Services Division

This division will report directly to the Senior Undersecretary and will consist of the Management Information Center and secretarial support in the form of a typing pool. An estimated 10 people will be in the typing pool and three people in the Management Information Center. One of the people in the Management Information Center will be a professional with a background in computer programming, who will be in charge of the entire division. Included in the functions of the Management Information Center will be data processing equipment operations, management report preparation, information filing, and data reduction.

C. Automation Capability

Although a specific description of a future DECUSA automation capability cannot be described because the future computer equipment supplier is not known at this writing, many of the functional capabilities and equipment characteristics are known. The future computer system will have a central processing unit, at least 256,000 characters of computer memory, over 50 million characters of on-line direct-access memory, a magnetic tape unit, 10 CRT display terminals, two letter quality printers, and two line printers. The terminals and printers will have the capability of displaying information in both English and Arabic. In addition, the line printer will be required to produce graphic output in the general form of "xy" graphs. All peripheral equipment, including terminals, will be attached to the computer system via direct cable.

The future DECUSA computer system will assist in both word processing and data processing assistance functions. Regarding word processing, terminal typist personnel will be able to prepare memoranda and other textual information on the CRT display terminals, store the keyed-in text on disk storage, and print the draft version on an attached printer. After proofing has uncovered errors and changes, the typist (with the earlier printout showing designated changes) will retrieve the stored text from the disk, type only the changes, and print out the corrected version. The future computer word processing capability will allow terminal typists to call on both Arabic and English word processing assistance, receive data not originally prepared by the system and incorporate that data into DECUSA's data base, archive old memoranda, prepare backups of existing text in the event of equipment failures, and use all typical functions usually found supplied with automated word processing systems.

In the DECUSA data processing operation, a large data base will be stored on disks containing training, commodity distribution, program/project funding, user agency, and supplier information. U.S. assistance monitoring data will be received from USAID generated magnetic tapes, attached terminals and possibly magnetic tapes from the participating banks. This data will be either data processing input or converted word processing input. The data will be structured to produce reports in a variety of sequences and various levels of summary. Both English and Arabic corresponding textual fields will be contained in the data base as separate items.

The software of the future DECUSA computer system will include an operating system which will allow multiple word processing and data processing users to interact with the computer concurrently, a word processing package, and all the typical data processing utility programs. These utility programs will consist of COBOL, FORTRAN and BASIC compilers; a generalized sort program, and peripheral storage printout routines. Also, a Data Base Management System (DBMS) or file management system package will be available for data update/retrieval use. Finally, application software will be developed and stored on the DECUSA computer system to perform the processing specifically needed for the U.S. assistance monitoring application.

#### D. Operational Sequence of Events

The most appropriate method to describe the future DECUSA operating environment as envisioned by JWK with the recommended changes is to discuss pertinent sequences of events which will take place at DECUSA, and amplify the importance of the recommended changes. Although many of the specifically presented activities have already been discussed from a general functional standpoint in Section III, "Assistance Monitoring Requirements", the recommended changes are not described and their benefits are not pointed out in that section. The future sequence of events activities considered pertinent are: budget preparation, program/project activity monitoring, commodity assistance monitoring, training monitoring, and funding monitoring. Each set of activities is discussed separately below.

##### 1. Budget Preparation

The initial activity performed in preparing the budget would be for DECUSA to determine potential candidate activities for future U.S. assistance. An alternative valid approach would be to develop a general form letter in Arabic to be sent to all current and potential user agencies requesting possible activities or commodities which would be potential candidates for U.S. assistance. This form letter would be prepared by the Funding Planning and Monitoring Division. The form letters would be typed using the computer word processing capability, and only the user agency representative's name and address would actually be typed by the typist. Included in the form letter for current user agencies would be a report containing that user agency's existing U.S. assistance being received. This information would be produced from the computer system data base.

U.S. assistance candidate responses would be screened by DECUSA personnel and determinations would be made as to whether a feasibility study is required. In the event that a feasibility study is deemed appropriate, discussions would take place with USAID, and USAID would cause a feasibility study to be performed. DECUSA would be advised of the progress of the study and would insure that the study was performed according to predefined guidelines and conducted with the proper intent in mind of the requestor of the assistance. USAID would perform the detailed monitoring of the feasibility study.

Once all the U.S. assistance candidates had been collected, Funding Planning and Monitoring Division personnel and USAID would carry on continuing meetings to develop the budget, and would establish a list of assistance candidates in order of priority. Certain high priority candidates would be studied in depth, and overall cost estimates would be derived. The automated data base containing current assistance information would be copied, and new assistance candidates would be submitted as if they were new activities. Computer runs using existing computer software for activity monitoring would be executed with the projected assistance information, and summarization reports would be prepared. In the preparation of the new assistance budget, similar current assistance activities would be used to model cost expenditures for new assistance candidates.

The Funding Planning and Monitoring Division would work in a close coordination with the corresponding USAID people to prepare an effective budget in a proper cost range with a politically acceptable mix of projected activities. Upon development of a reasonable budget, with the assistance of the computer system in the development of numerous variations, budget reports in Arabic would be presented to upper echelons of the Egyptian Government. USAID would be provided with English version reports for presentation to American Government management. Feedback from management would cause more report variations to be produced.

## 2. Program/Project Status Monitoring

At some point in time, after a feasibility study has been completed or a decision has been made by DECUSA and USAID\* that a given program/project activity is valid, a project agreement will be drawn up to initiate program/project activities. The project agreement will have funding set-aside, most probably as part of a sectoral program funding source. The appropriate sectoral division within the Central Directorate for USAID assistance will establish a manual file and prepare information to be input to the computer system to designate the establishment of a new program/project with committed funding specified. In the meantime, the user agency would initiate procurement activities, with the assistance of USAID, to obtain professional services. One or more contracts would result, and DECUSA would be informed of each contract award. Upon award of a contract, the responsible sectoral division would confer with the user agency, USAID and the contractor, if necessary, and would develop two separate plans for a contract. The first plan would involve technical performance, and would consist of designating all general tasks which result in definable milestones. For each task milestone, a planned task initiation and completion date would be specified. The second plan would be concerned with payment schedules, and would consist

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\* A number of defined procedures within USAID must take place, such as the development of a Project Paper (PP) and Project Identification Document (PID) before USAID would consider approval. This study is confined to DECUSA procedures, however, and does not treat internal USAID procedures.

of designating months when payments are expected, and the projected amount of payment. The two plans would be prepared by sectoral divisions and agreed upon by both USAID and the user agency. The contract and plans would be stored in the program/project manual file, and the information from the plans would be submitted to the DECUSA computer system for purposes of tracking. Textual fields would be in both Arabic and English.

The plan development exercise will be an extremely important part of the program/project monitoring activity, and will require the participation of senior level personnel. The essentials of the plans will be drawn up by the division supervisor of the particular sectoral division within the Central Directorate for USAID assistance and possibly with technical assistance from people in the Central Directorate for Technical Services. The plan will entail a thorough analysis of the contract and several meetings with USAID and user agency personnel. The estimates derived will require a understanding of technical aspects of the contract and a familiarity of the sectoral environment.

After the contract plans have been developed and submitted to the computer system, the tracking of program/project progress and expenditures would be performed on a monthly basis. A program/project report would be generated which would designate planned and known active tasks with completion dates and status of each active task. Also, actual bank funding expenditures would be designated, along with the planned expenditure schedule. A designated program/project monitor would review the report each month, scrutinize and file bills, contact the user agency as to initiation or completion of specific tasks, and assess the actual rate of spending versus the planned expenditures. Any potential problem areas would be reported to the supervisor of the sector monitoring division and possibly to the Undersecretary of the Central Directorate for the USAID Assistance. In any event, the status of individual tasks will be entered into the computer system. It is pertinent to point out that the personnel assigned as program/project monitors will be junior level professionals, and will each monitor the details of about 10 program/projects.

A major function of a program/project monitor will be to act as an Arabic/English translation vehicle to review information in both languages, and discuss the status of events both with user agency and USAID personnel. After the status and other information is submitted to the computer system, the monthly status report will be produced in both Arabic and English. An English version will be sent to USAID and an Arabic version will be sent to the user agency. The computer generated monthly status reports will be grouped by organization of interest, and four different printouts will be provided: (1) English version in organizational sequence of USAID monitor personnel, (2) Arabic version by user agency, (3) and (4) Arabic and English versions in sequence by DECUSA sector or division.

On a periodic basis, in the range of every two years, each program/project will be audited by a senior staff member of the Central Directorate for

Technical Services. This individual would work in close coordination with the Supervisor of the Sector Monitoring Division. As mentioned in an earlier section, problem program/projects would be audited as needed. The manual file containing the project papers, all contracts and associated contract plans, all computer generated monthly and other reports, all bills, and any other correspondence, would be reviewed in depth. The user agency would be contacted and a program/project review would be conducted with both DECUSA and USAID involved. During the review, each contract would be scrutinized and earlier contract plans would be questioned as to current relevance. Any problems would be discussed, and an audit report would be prepared by the assigned auditor with recommendations included. The auditor and the supervisor of the particular sector monitoring division would prepare revised contract plans, if applicable, and adjust the computer system data base accordingly. This audit process will be a standard procedure of the program/project completion exercise, and the final audit effort will include closing out the manual file and adjusting the computer system data base.

### 3. Commodity Status Monitoring

USAID is heavily involved in commodity distribution monitoring and will produce most of the basic data which will be developed for reporting purposes. DECUSA's functions will consist of overall distribution monitoring and preparing Arabic reports in commodity status and funding, trouble shooting problem deliveries, and after-the-fact checking of commodity use. In the description below, commodity status monitoring, for the most part, refers to CIP status; however, PL-480 funding commodities will also be monitored and reports will be prepared on PL-480 status. The discussions below can also be implied for PL-480 commodity monitoring with the exception being that that PL-480 assistance monitoring will be performed by the Central Directorate for Economic Cooperation.

After a commodity agreement has been established, the CIP Division would input the user agency agreement funding allocations, along with letter of commitment subfunding amounts to the computer system. When contracts and letters of credit are established, this information will also be input to the computer system, along with final delivery dates. When final delivery occurs, the status of the delivery will be posted to the computer system with data received from USAID. Reports will be produced on a monthly basis depicting overall funding and commodity delivery status of individual letters of credit deliveries.

The commodity monitoring personnel will receive the initial commodity agreement and contract data from USAID, and translate the data into Arabic before inputting both Arabic and English information. When final delivery status data is obtained in machine readable form from USAID, it will be input directly to the computer system. The commodity monitor personnel will perform a number of checks each month when reviewing monthly status reports. Each letter of commitment report will be scrutinized for long standing unobligated funding and overdue deliveries. Incoming bills and other information from banks will be reviewed against status of delivery

information. Upon completion of final delivery, commodity monitoring personnel will check with the user agency as to overall satisfaction with what was delivered. The report will also be used to initiate trouble shooting actions to determine any actions which DECUSA may take to expedite overdue deliveries. Upon review of a monthly status report, after any corrections have been made, English and Arabic versions of a commodity distribution status report will be delivered to USAID and user agencies, respectively.

A major benefit of automation of commodity status is the fact that the funding for commodities can be tied into program/project funding for total funding allocation reporting to upper management. All user agencies and upper echelons of government will be able to assess the total U.S. assistance picture in automated summarized reports, with all assistance being reported.

#### 4. Training Monitoring

The DECUSA training monitoring activity will remain about the same as the current training monitoring effort, with the exception that DECUSA will prepare Arabic training status reports. The training data collected by USAID will be input to the DECUSA computer system, and pertinent text fields will be translated into Arabic. Arabic version training reports will be generated, and training information will be included as part of a program/project information report. The training monitoring will be performed by personnel in the Central Directorate for Technical Services.

#### 5. Funding Monitoring

Funding monitoring will be performed at two distinct levels by DECUSA; by the individual program/project and commodity monitor personnel and by funding monitors within the Central Directorate for Technical Services. All funding monitoring will be automated. Funding information will consist of three different types: (1) committed and obligated funding, (2) projected expenditures, and (3) actual expenditures. Committed and obligated funding information for the computer system will be prepared by DECUSA from agreements between DECUSA and USAID and from contracts reported on by USAID. All such information will be received, scrutinized and submitted to the computer system by the funding monitors of the Central Directorate for Technical Services. Planned expenditures for individual program/projects will be submitted by the program/project monitors. Actual expenditure information will be received from both the banks and USAID and will be input after scrutiny by the funding monitors of the Central Directorate for Technical Services.

Of the three types of funding, the planned expenditure funding type differs considerably from the other two types in that it does not represent existing funds, but only plans. As mentioned previously, planned expenditures will be used by program/project monitors to track whether program/project obligated funds are being spent as planned. Because planned expenditures, when presented meaningfully, can assist in explaining the controversial

pipeline problem, and budget preparation will require the use of planned expenditure data, that information will be important to overall funding monitoring. However, the major monitoring function regarding funding monitoring is to determine what has and what has not been spent of the \$7.2 billion in U.S. assistance, and planned expenditures are not considered in such monitoring. The overall funding monitoring effort will be performed by the Central Directorate for Technical Services, and will consist of tracking availability of committed and obligated funds, monitoring expenditures of existing activities, and developing reports regarding funding. Detailed committed funding is segmented into three different categories: CIP funds, program/project funds, and PL-480 funding. Also, U.S. program/project funds are augmented on occasion with Egyptian funds. Once allocated to different agreements, the funds will be tracked with those agreements, and reporting for obligated funding will be at the agreement number for program/projects and the letter of credit number, within letter of commitment number, for CIP and PL-480 funding.

The major funding monitoring effort will be related to CIP funding, and potentially a large work effort might have been to input CIP expenditures. However, USAID is automating the monitoring of CIP funds, and such data will be captured from the USAID system for use by DECUSA. Also, the Egyptian banks provide funding information which could be checked with USAID data. PL-480 and program/project expenditure tracking also will require a monitoring effort; however, the volume of distinct expenditures is not extensive and the DECUSA funding monitoring personnel could input the PL-480 and program/project expenditures directly without relying on previously generated data.

The automation support for funding monitoring will consist of the system receiving all obligated, committed, and expenditure funding information and producing detailed reports on a monthly basis. Once the detailed funding information reports have been checked and determined to contain valid information, automated detail and summarized reports will be produced in sequence by user agency, by agreement number, and by time of expenditure. These reports will be in both Arabic and English.

## APPENDIX A

## APPENDIX A

### CIP AGREEMENT

#### User Agency/Commodity Type/Funding Breakdown Chart

The contents herein reflect specific types of commodities and associated funding provided to individual users for all allocated agreements to date. Because of minor errors in the source data, funding totals do not correspond with CIP totals contained in Section II of this report. The contents within, however, are sufficiently accurate to provide the reader a valid understanding of which user agencies received which types of commodities under the CIP program.

CIP AGREEMENT FUNDING

Agreement #	Ministry	Commodity Distribution	Obligated Amount
	Agriculture	Soybean Meal	3,000,000
	Communication	Microwave System	15,000,000
	Education	Medical Equipment	2,409,000
		Medical Instruments	5,193,500
		Syringes, Needles, etc.	137,000
		Visual Aid Equipment	56,000
		Freight/Med. Instruments	100,000
		Scanners (2) Laser	478,760
		Amt. Available	8,325,740
			<u>16,700,000</u>
K-603 FY 1981	Electricity	Transformers	5,000
		Power Distribution	6,500
		Transformers & Acces.	3,585,994
		Sp. Parts/Turbines	2,583,659
		Sp. Parts/Power	17,143
		Parts/Turbines	759,397
		Power Co. Equip.	500,000
		Heavy Hauling Unit	500,000
		Gen. Parts	5,000,000
		Equip. for Power	500,000
		Tractor Trailers	4,000,000
		Turbine Gen.	11,325,280
		Equip/Elect.	974,720
		Sp. Parts/GE Gas	2,034,985
		Sp. Parts/GE Turbines	343,709
		Recording Rolls	56,440
		Turbine Motors	11,554
		Parts/Steam Plant	59,088
		Collector Assemblies	47,250
		Sp. Parts/Boilers	275,000
Fire Trucks	586,775		
Diesel Generators	1,619,256		
		<u>46,300,000</u>	
	GOFI	Sugar Boilers	7,871,561
		Sugar Milling Station	6,500,000
			<u>14,371,561</u>
	Governorates	Road Construction Equip.	2,000,000
		Rear Loading Refuse	206,506
		Truck and Road Equip.	944,050
		Sanitation/Fire/Light.	355,621
		Trucks, Side Loading	2,980,800
		Trucks, Dump	603,750
		Sweepers, Vacuum St.	905,050
		Hammers, Hydraulic	99,493
		Amt. Available	5,404,391
		<u>15,000,000</u>	

Agreement #	Ministry	Commodity Distribution	Obligated Amount	
K-603 FY 1981 (cont)	Housing	Trucks/Trailers	2,500,000	
	Industry	Coking Coal	33,498,968	
		Tobacco	5,417,750	
		Amt. Available	583,282	
				<u>39,500,000</u>
	Information	Web-Offset Printing	1,500,000	
		Printing Equipment	1,793,330	
		Sheet-Fed Presses	2,138,520	
		Bookbinding Line	1,500,000	
		Offset Presses & Aux.	2,674,720	
		Color Scanners	478,760	
		Plate Making Equip.	17,000	
		Page Makeup Cameras (IMP/Level)	394,950 500,000	
		Amt. Available	2,085,130	
	Irrigation	Pumps, Irrigation	1,870,000	
		Construction Equipment	1,130,000	
				<u>3,000,000</u>
	Social Affairs	Computer	2,000,000	
	Supply	Tallow	13,334,013	
Amt. Available		12,794,399		
			<u>26,128,439</u>	
Transport	(IMP/Level)	2,123,285		
	Sp. Parts/Trucks	800,000		
	Sp. Parts/Locomotive	1,780,900		
	Turbochargers	219,100		
	Wheel Loader	64,830		
	Earth-Moving Equipment	70,000		
	Asphalt Finishers	345,864		
	Amt. Available	1,945,021		
			<u>7,349,000</u>	
Agreement #	Ministry	Commodity Distribution	Obligated Amount	
K-055 FY 1981	Private Sector	-----	35,000,000	
	Supply	Corn	17,447,598	
		Tallow	5,347,702	
		Freight/Corn	6,204,700	
		Amt. Available	6,000,000	
			<u>35,000,000</u>	

Agreement #	Ministry	Commodity Distribution	Obligated Amount	
K-602 FY 1980	Education	Lab Equipment	300,000	
		Office Equipment	700,000	
		Basic Educ. Commodities	8,699,900	
				<u>10,000,000</u>
	Private Sector	-----	5,500,000	
	Supply	Tallow	17,298,552	
		Frozen Chickens	4,172,480	
		Corn	13,435,122	
		Lentils	3,885,222	
		Amt. Available	708,624	
			<u>39,500,000</u>	

Agreement #	Ministry	Commodity Distribution	Obligated Amount	
K-054 FY 1980	Agriculture	Fish Meal	2,000,000	
	Civil Aviation	Firefighting Equip.	1,400,000	
		(IMP/Level)	1,522,623	
	GOFI	Tire Making Mach.	3,082,416	
		Bias Cutters & Parts	472,927	
		Refiner Mill, Cracked	1,162,034	
				<u>6,240,000</u>
	Governorates	Refuse Collection	3,000,000	
		Rear Loading Refuse	1,000,000	
				<u>4,000,000</u>
	Health	Mattresses, Hospital	245,956	
		Amt. Available	1,284,035	
				<u>1,530,000</u>
	Housing	Turbine Generators	962,770	
		Amt. Available	210,196	
				<u>1,172,966</u>
	Industry	Woodpulp	7,199,905	
		Tobacco	17,429,077	
		Acetate Tow	2,298,564	
		Polyacrylic/Polyester	703,884	
		Tinplate	12,816,679	
		Coking Coal	26,988,832	
		Acrylic Tow	492,500	
		Kraftliner	1,495,560	
		Wire Supplies	386,825	
		Sp. Parts/Textile	40,974	
Banking Charges		15,000		
Sulphur Ore		4,119,668		
Amt. Available		1,116,533		
			<u>83,665,000</u>	
Information	Installation Service	210,874		
	Elec. Transformer	1,296,405		
	Air Cond. Equip.	363,300		
	Offset Presses	1,750,000		
	Plate Making Equip.	214,650		

K-054 FY 1980 (cont)	Information (cont.)	Access/Offset	39,841
		Supervision Services	77,870
		Inch Motor Access	440,240
		Offset Presses & Aux.	6,354,000
		Printing Plates	660,000
		Photo Typesetting Equip.	769,000
		Gen. Power	802,250
		Printing Equip.	106,039
		Amt. Available	592,609
			<u>13,699,000</u>
	Irrigation	Diesel Electric Pump	400,000
		Generators, Transform.	500,000
		Amt. Available	100,000
		<u>1,000,000</u>	
Private Sector		-----	25,000,000
	Suez Canal Authority	Sp. Parts/ VTMS	1,137,164
		Amt. Available	2,209,836
		<u>3,347,000</u>	
	Supply	Corn	55,514,062
		Frozen Chickens	10,813,190
		Freight Corn	90,114
		Lentils	5,073,581
		Sp. Parts/Trucks	385,014
		Tallow	18,927,406
		<u>93,000,000</u>	
	Transport	Increase of L/C 3035	7,891,309
		Helmond Valley Veste	5,000,000
		Transmissions	937,034
		Amt. Available	127,691
		<u>13,956,034</u>	
Agree- ment #	Ministry	Commodity Distribution	Obligated Amount
		Communications	Microwave System
K-053 FY 1980	Electricity	Elec. Lab. Equip.	720,083
		Diesel Generators	1,400,000
		Banking Charges	2,676
		Amt. Available	11
			<u>2,122,770</u>
	Housing	Turbine Generators	6,877,230
		Amt. Available	500,000
		<u>7,377,230</u>	
Private Sector		-----	3,000,000
	Supply	Frozen Chickens	2,252,250
		Corn	4,691,665
		Freight for Corn	467,424
		Amt. Available	88,661
		<u>7,500,000</u>	

Agreement #	Ministry	Commodity Distribution	Obligated Amount
	Communications	Microwave System	1,500,000
	Education	Lab Equipment	1,847,774
		Binding Equip.	541,000
		Printing Press	1,663,000
		Educational Material	7,614,959
		Micro Film	688,896
		Photo Copying Machine	553,406
		Microfilm Journal	228,189
		Microscopes	703,000
		Microfilm Equip.	158,428
		Furnishing & Equip.	532,310
		Furniture	837,533
		Copying Machine	257,055
		Amt. Available	1,074,450
			<u>16,700,000</u>
	Electricity	Technical Services	500,000
		Engines, Gas Turbines	4,942,100
		Gens. & Sp. Parts	3,968,974
		Amt. Available	88,926
			<u>9,500,000</u>
	GOFI	Unloading System	1,894,090
		Sugar Milling Station	8,024,690
			<u>9,918,780</u>
	Industry	Coking Coal	4,963,165
		Amt. Available	118,055
			<u>5,081,220</u>
	Information	Uninterruptible Power	293,856
		Amt. Available	6,144
			<u>300,000</u>
	Private Sector	-----	8,500,000
	Supply	Tallow	10,542,766
		Chickens, Frozen	7,415,775
		Corn	10,354,456
		Amt. Available	187,003
			<u>28,500,000</u>
	Transport	Construction Equip.	4,350,000
		Crushing & Screening	590,000
		Sp. Parts/Asphalt	25,655
		Amt. Available	34,345
			<u>5,000,000</u>

K-601  
FY  
1979

Agreement #	Ministry	Commodity Distribution	Obligated Amount
K-601 FY 1979 (cont)	Agriculture	Fishmeal	4,802,458
		Soybean Meal	177,842
			<u>4,980,300</u>
	Civil Aviation	Fire Fighting Equip.	300,000
	Communication	Microwave Network	3,149,266
		Microwave System	60,000
		Amt. Available	290,734
		<u>3,500,000</u>	

Agreement #	Ministry	Commodity Distribution	Obligated Amount
K-052 FY 1979	Housing	Motor Graders	519,396
		Amt. Available	604
			<u>520,000</u>
	Industry	Coking Coal	30,000,000
		Acetate Tow	3,393,069
		Tobacco	24,993,319
		Tobacco Process	1,130,000
		Woodpulp	5,161,500
		Tinplate	22,992,924
		Sulphur, Yellow	1,284,576
		Freight/Sulphur Ore	149,712
		Amt. Available	781,900
			<u>89,887,000</u>
	Information	Printing Machinery	1,130,358
		Printing Equip.	3,988,917
		Lab Equip.	25,000
		Sp. Parts/Trucks	64,762
		Graphotype Mach.	12,000
		Auto PABX Tel.	175,283
		Phototypesetting	350,000
Offset Plate Process		60,000	
	Offset Press	60,407	
	Amt. Available	704,273	
		<u>6,571,000</u>	
Irrigation	Electric Motors	396,243	
	Diesel Electric Pump	103,757	
		<u>500,000</u>	
Private Sector	-----	25,000,000	
Supply	Freight/Tallow	5,175,598	
	Cotton Seed Oil	10,361,460	
	Lentils	5,627,866	
	Frozen Chickens	2,988,375	
	Freight for Corn	2,218,749	
	Sp. Parts/Trucks	992,700	
	Tallow	29,496,029	
	Corn	17,379,380	
	Automatic Bakeries	18,126,202	
		Amt. Available	297,487
		<u>90,000,000</u>	

	Cranes & Shovels	325,986
	Pumps	24,014
Trade	Mach. & Equip.	649,325
	Amt. Available	375
		<u>999,700</u>

K-052 FY 1979 (cont)		Sp. Parts for Buses	7,352,017
		Sp. Parts for Ward	792,152
		Transmissions	204,312
		Bus Engines	385,000
		Traffic Control Center	3,600,000
		Sp. Parts/Locomotive	4,539,242
		Lead Acid Batteries	222,302
		Sp. Parts for KENW	300,854
		Rollers, Tandem	57,046
	Transport	Road Construction Equip.	3,542,674
		Asphalt Plant Equip.	31,795
		Front End Loaders/GR	599,608
		Roller Vibratory/TA	241,881
		Drum Mix Asphalt Plant	550,000
		Asphalt Plant	1,355,926
		800418800602Self-Pro	1,846,676
		Vibratory Rollers	242,933
		Training Costs	200,000
		Construction Equip.	579,000
		Amt. Available	197,275
		<u>27,742,000</u>	

Agree- ment #	Ministry	Commodity Distribution	Obligated Amount
(A)	Civil Aviation	Radar Surveillance	250,000
		Gens	379,481
		Trucks, Pickup	3,062,158
		Forklift & Cranes	2,500,180
	Electricity	Gens, Diesel	2,642,307
		Lab Equip. & Furn.	445,330
		Electrical Sp. Parts	4,645,500
K-045 (&B)		Elec. Lab Equip	814,926
FY		Generators	76,564
1977		Banking Charges	5,229
1978		Amt. Available	1,317
(A)			<u>15,003,000</u>
	GOFI	Welding Unit	294,700
		Sp. Parts/Textiles	133,172
		Sugar Milling Sta.	337,670
		Thick Film Lab.	391,600
			<u>1,157,142</u>

K-045 (A&B) FY 1978 1977	(B)		Knitting Machine	116,000
			Turning Lathe & Acces.	23,600
		GOFI	Sp. Parts/Tobacco	66,927
			Cargo Vans	658,597
				<u>1,491,964</u>
	(A)		Refuse Collection Equip.	6,830,358
		Governorates	Loaders	422,824
			Firefighting Trucks	704,850
			Firefighting Equip.	1,675,615
			Radio Network	224,896
		Amt. Available	37,457	
			<u>9,896,000</u>	
(A)		Tobacco	24,980,468	
	Industry	Acetate Tow	6,488,058	
		Woodpulp	1,756,600	
		Freight/Sulphur Ore	76,000	
		Amt. Available	3,332	
			<u>33,304,458</u>	
(B)		Graphite Electrodes	1,498,923	
	Industry	Tinplate	10,002,541	
		Coking Coal	28,909,523	
		Acetate Tow	697,227	
		Amt. Available	2,245,494	
			<u>57,508,036</u>	
(A)		Photo Typesetting Eq.	5,440,009	
		Binding Line	1,477,173	
		Sp. Parts/Photo Mech.	82,818	
		Trucks	230,000	
		Photo Film & Chem.	33,575	
		Film Processors	132,575	
	Information	Trucks, Electric	113,660	
		Sp. Parts/Printing	56,916	
		Sp. Parts/Offset	14,624	
		Printing Cabinets	34,263	
		Single Knife Trimmer	23,544	
		Film & Chemicals	21,044	
		Printing Equipment	1,492,716	
		Photo Typesetting	4,122,000	
		Amt. Available	78,003	
			<u>13,353,000</u>	
(A)		GE Vacuum Switchgear	347,000	
	Housing	Amt. Available	3,000	
			<u>350,000</u>	
(A)		Navigation Control	17,228,800	
	Suez Canal Authority	Marine Diesel Engine	58,280	
		Generators	123,633	
		Hand Held Telephone	25,000	

K-045 (A&B) FY 1977 1978	Suez Canal Authority (cont.)		Gas Masks	165,134
			Safety Equipment	40,353
			Core Drill & Accessories	61,300
			Sp. Parts/Computer	289,234
			Test Equipment	215,411
			Elec. Spare Parts	77,502
			Vtms. Sp. Parts	1,567,160
			Mobile Radio Units	20,986
			Cranes (Rough Terrain)	220,035
			Wheel Loaders	295,431
			Radar Operator Equip.	460,000
			Trucks, Diesel, Forklift	90,687
			Road Construction Equip.	136,833
			Liquid Foaming Agent	440,651
			Air Compressor	33,685
			Crawler Drill	76,528
			Amt. Available	26,357
				<u>21,653,000</u>
	(A)	Supply	Freight/Corn	7,596,807
			Tallow	39,616,612
	Chickens, Frozen		23,655,112	
	Corn		24,595,767	
	Freight/Tallow		262,537	
	Sp. Parts/Trucks		14,381	
	Amt. Available		367,184	
			<u>96,108,400</u>	
(B)	Supply	Tallow	14,997,237	
		Amt. Available	2,763	
			<u>15,000,000</u>	
(A)	Trade	Machinery & Equipment	843,257	
		Amt. Available	743	
			<u>844,000</u>	
(A)	Transport	Tractor Trailers	20,998,815	
		Turret Lathes	1,400,000	
		Traffic Equipment	267,560	
		Road Const. Equipment	250,000	
		Motor Graders	93,044	
		Loaders	178,098	
		Road Rollers	237,125	
		Front End Loaders	227,836	
		Railcar Assemblies	426,875	
		Amt. Available	1,647	
			<u>24,081,000</u>	

Agreement #	Ministry	Commodity Distribution	Obligated Amount
	Communication	Microwave System	31,919,220
		Amt. Available	780
			<u>31,920,000</u>
K-038 FY 1977 1978		Lab Equipment	273,425
		Amt. Available	45,575
			<u>319,000</u>

Agree- ment #	Ministry	Commodity Distribution	Obligated Amount
K-038 FY 1977 1978 (cont)	Electricity	Turbine Gens	2,674,720
		Food Processing Mach.	1,717,749
		Salt Harvesters	232,100
		Vans and Buses	320,454
		Tobacco Conditioning	115,247
		Can Seaming Mach.	149,999
		Tin Dressing Equip.	252,665
		Trucks, Dump	204,930
		Loaders, Front	76,538
		Metalworking Mach.	107,441
		Electrical Apparatus	197,975
		Grinding Mach.	155,623
		(IMP/Level)	267,962
		Hydrogenating Edible	1,040,309
		Spinning & Weaving	385,181
		Boiler House Equip.	114,385
		Glass-Steel Reaction	411,907
		Turning Lathes & Acces.	926,000
		Industrial Handling	754,330
		Mobile Cranes	915,500
		Sp. Parts/Cranes	75,616
		Engines, Diesel, etc.	384,733
		Automotive Maintenance	221,550
		Punch Press	366,218
		Forklift Trucks	342,048
		Machinery & Equip.	651,023
		Pipes & Fittings	180,751
		Pin Mills	223,665
		Textile Equip.	702,450
		Termoforming Mach.	281,532
		Balancing Mach. etc.	112,560
		Carbon Dioxide Gen.	519,470
		Sugar Boiler Mach.	3,373,526
Sugar Milling Station	341,084		
Sp. Parts/Sugar Boiler	752,333		
Amt. Available	3,033		
		<u>16,877,887</u>	
	Governorates	Refuse Collection Equip.	1,998,240
		Amt. Available	1,760
			<u>2,000,000</u>
	Health	Communication Equip.	3,100,765
		Excess Property	613,278
		Amt. Available	1,735
			<u>3,715,778</u>

Agreement #	Ministry	Commodity Distribution	Obligated Amount		
K-038 FY 1977 1978 (cont)	Industry	Tobacco	35,433,014		
		Agriculture Equip.	1,889,385		
		Woodpulp	5,944,990		
		Polyster Yarn	1,099,160		
		Dyestuffs and Aug.	2,075,303		
		Synthetic Fibers	2,762,882		
		Coking Coal	4,025,840		
		RuJber, Snythetic	499,349		
		Machinery & Equip.	53,962		
		Caproactam	1,450,400		
		Sp. Parts/Textile	445,855		
		Doffing Mach.	157,073		
		Textile Machinery	174,940		
		Wires, Steel Drop	64,434		
		Trucks, Forklife	304,644		
		Sp. Parts/Weaving	88,994		
		Spinning Machines	157,798		
		Spinn. & Weaving Equip.	137,017		
		Firefighting Equip.	147,830		
		Solid Caustic Soda	999,814		
		Parts for Auto Works	11,423		
		Textile Pickers	12,445		
		Sp. Parts/Forklife	10,484		
		Tinplate	10,825,479		
		Graphite Electrodes	4,302,104		
		Components/Air Cond.	947,749		
		Hospital Equip.	204,000		
		Freight/Sulphur	41,000		
		Amt. Available	292,057		
			<u>79,459,984</u>		
			Information	Transmitters	4,692,608
				Printing Equipment	461,215
				Offset Presses	12,975,145
		Die Cutting Machine	100,788		
		Scanning Machine	444,340		
		Photographic Supplies	22,928		
		Folding & Gluing	189,916		
		Electric Forklife	81,053		
		Printing Press	441,965		
		Binding Machine	245,540		
		Components/Scanners	13,601		
		Single Knife Trimmer	347,320		
		Page Makeup Cameras	156,166		
		Amt. Available	2,861		
			<u>20,164,446</u>		

Agreement #	Ministry	Commodity Distribution	Obligated Amount
K-038 FY 1977 1978 (cont.)	Housing	Trucks, Cement	1,313,000
		Amt. Available	187,000
			<u>1,500,000</u>
	Suez Canal Authority	Dredge	1,990,976
		Autos, Passenger	281,116
		Pumps, High & Low	315,234
		Trucks, Platform	192,561
		Generator Sets, Diesel	833,347
		Sp. Parts	164,395
		Workshop Equip.	164,569
		Hand Tools	37,909
		Generator Sets	76,865
		Photocopying Machine	6,197
		Crane, Amphibious	199,681
		Mobil DC Diesel	54,600
		Trucks, Electric	148,245
		Air Compressors	114,599
		Tele. Cables/Terminal	2,416,423
		Sp. Parts/Generator	79,168
		Fire Fighting Computer	193,540
		Fire Fighting Equipment	30,116
		Shipbuilding Equip.	1,000,000
		Sp. Parts/Cranes	280,541
		Telephone Cables	45,904
		Transceivers	167,272
		Arc Welding Sets	363,195
		Locomotive Tractor	51,800
		Pumps	145,474
		Wreckers	68,826
		Roadbuilding Equipment	148,816
	Generators	266,887	
	Sp. Parts/Dredger	441,884	
Dredging Equipment	1,000,000		
Excess Property	17,000		
Amt. Available	<u>1,710,860</u>		
	<u>13,008,000</u>		
Supply	Corn	65,716,500	
	Chickens, Frozen	10,717,151	
	Tallow	48,122,371	
	Edible Oils	85,843,913	
	Freight for Tallow	219,112	
	Corn & Freight	6,216,215	
	Freight for Corn	578,814	
	Raw Cotton	9,709,500	
Amt. Available	<u>451,421</u>		
	<u>227,574,997</u>		

Agreement #	Ministry	Commodity Distribution	Obligated Amount
K-038 FY 1977 1978 (cont.)	Transport	Truck-Tractor w/Semi	7,750,000
		Traffic Control System	9,690,801
		Shop System	599,324
		Construction Mach.	700,000
		Asphalt Finishers	75,000
		Excess Property	953,562
		Refrigerated Railcar	2,591,195
		Tractor Motors	3,427,214
		Amt. Available	1,466
		<u>25,788,562</u>	

Agreement #	Ministry	Commodity Distribution	Obligated Amount
K-036 FY 1976	Agriculture	Utility Vehicles	271,920
		Soybean Seeds	1,268,989
		Trucks, Pickup	3,126,662
		Sprayer, Agriculture	1,890,178
		Soybean Meal	11,441,256
		Amt. Available	93,573
			<u>18,092,578</u>
	Education	Scientific Equip.	876,290
		Dental Equip.	79,363
		Lab & Scientific Equip.	714,894
		Lab Furniture	2,000,000
		Lab Equip.	465,708
		Computer System	217,813
		Amt. Available	73,339
		<u>4,427,407</u>	
	Governorates	Refuse Collection	2,959,299
		Amt. Available	27,701
			<u>2,987,000</u>
	Industry	Matchboard	994,783
		Farm Equip.	5,321,015
		Freight/Sulphur	161,000
		Amt. Available	5,217
			<u>6,482,015</u>
	Information	Transmitters	5,000,000
	Irrigation	Booster Pump & Parts	1,174,819
		Deepwell Pumps	714,948
		Electrical Apparatus	91,537
Herbicides		849,728	
Cables		352,929	
Amt. Available		20,039	
	<u>3,204,000</u>		

Agreement #	Ministry	Commodity Distribution	Obligated Amount
K-036 FY 1976 (cont.)	Housing	Deepwell Pumps	710,787
		Construction Materials	706,000
		Welding Electr.	244,214
		Amt. Available	999
			<u>1,662,000</u>
	Suez Canal Authority	Elevated Dry Dock	1,149,600
		Carpenter Workshop	296,660
		Sp. Parts/Cranes	1,318,214
		Sp. Parts/Dredger	870,071
		Loader 03611	25,000
		Amt. Available	20,455
			<u>3,680,000</u>
	Supply	Sp. Parts/Trucks	518,126
		Amt. Available	874
			<u>519,000</u>
	Transport	Sp. Parts/Buses	2,488,301
Sp. Parts/Trucks		6,416,321	
Snap-On Tools		17,432	
Amt. Available		23,946	
		<u>8,946,000</u>	

Agreement #	Ministry	Commodity Distribution	Obligated Amount
K-030 FY 1975	Education	Computer System	110,000
	Electricity	Cables	7,067,035
		Jeeps	783,517
		Microbuses	436,920
		Truck/Tractor	2,104,631
		Insulated Washers	1,105,301
		Insulated Elec. Springs	14,054
		Spare Parts/Steam Turbine	1,221,917
		Cranes	3,165,151
		Hand Jacks	26,560
		Transformers	4,991,017
		Electrical Apparatus	124,062
		Spare Parts/Generator	112,657
		Spare Parts/Auto	47,035
	Chemicals	267,802	
			<u>21,466,659</u>
		Amount Available	533,341
			<u>22,000,000</u>
	Governorates	Containers	210,782
		Front End Loaders	337,645
Truck - Wrecker Body		4,900	
Truck - Firefighting		842,054	
Motor Graders		211,596	
	Amount Available	1,750,023	
		<u>3,357,000</u>	

Agreement #	Ministry	Commodity Distribution	Obligated Amount
K-030 FY 1975 (cont.)	GOFI	Tire Plant Boilers	272,782
		Rotary Furnace	5,674,950
		Food Processing Mach.	565,477
		Rock Drills	449,615
		Trucks, Dump Body	1,540,077
		Trucks	195,000
		Tractors	36,458
		Geophysical Tools	120,414
		Engines/Marine Diesel	134,504
		Sp.Parts/Rotary Furnace	940,190
		Dozer and Excavator	525,668
		Salt Harvesting Machine	334,750
		Match Making Machine	1,114,406
		Welding Equipment	17,000
		Trucks -1/4 ton	160,857
		Truck Mounted Cranes	896,594
		Tractor and Spare Parts	154,256
Industry	Coking Coal	24,978,000	
	Tinplate	7,856,337	
	Freight/Sulphur Ore	640,000	
	Amount Available	74,663	
		<u>33,549,000</u>	
Information	Antennae	2,593,260	
	Transmitter/Shortwave	1,462,568	
	FM Trans. Equipment	322,560	
	Transmitter	3,767,723	
	Truck, Firefighting	111,130	
	Vans	225,313	
	Truck, Forklift/Sp.Parts	298,045	
	Spare Parts/Vans	45,999	
	Spare Parts/Electric	33,095	
	Binding Machine	450,000	
	Binding & Stitching	85,181	
	Printing, Step & Repeat	53,097	
	Rectifier & Inverter	11,446	
	Telephone Switches	804,889	
	Trucks	867,112	
	Telecom. System	152,758	
	Spare Parts/Presses	26,537	
Amount Available	7,640,287		
		<u>18,951,000</u>	
Irrigation	Electric Motors	183,678	
	Amount Available	8,322	
		<u>192,000</u>	

Agreement #	Ministry	Commodity Distribution	Obligated Amount
		Tallow	30,868,821
		Freight/Tallow	5,413,439
		Grain Unloaders	2,999,997
	Supply		<u>39,282,257</u>
		Obligated Amount	35,000,000
			<u>4,282,257</u>
		Special Tools	7,987
		Turret Lathes	441,245
		Lathes & Handsaws	37,991
		Road Markers & Spare Parts	35,830
		Spare Parts/Asphalt Plant	69,627
		Carbon Steel Angles	123,628
		Steel	37,015
		Carbon Steel Channels	64,417
		Dozers	196,424
		Motor Graders	511,160
		Spare Parts/Automotive	7,071,779
	Transport	Lift Equipment	15,400
		Spare Parts/Generator	1,868,381
		Welding Rods	41,887
		Buses	6,381,600
		Truck/Dump	65,343
		Engines, Marine Diesel	839,088
		Spare Parts/Buses	54,041
		Spare Parts/Railway	4,999,999
		Spare Parts/Diesel Eng.	304,506
		Excess Prop. RR Wagons	1,000,000
		Freight	4,971
		Pumps, Diesel Injector	19,002
		Compressors, Air	642,309
		Crane & Accessories	196,424
			<u>25,526,141</u>
		Obligated Amount	25,382,000
			<u>144,141</u>

Agreement #	Ministry	Commodity Distribution	Obligated Amount
		Street Lighting	3,281,174
		Pulley Bl. Anchor Shackles	21,613
	Electricity	Cables & Accessories	6,414,332
		Amount Available	12,881
			<u>9,730,000</u>
K-29		Medical Items	5,348,000
FY		Excess Prop./Med. Items	105,859
1975	Health	Excess Mattresses/Hosp. Beds	520,917
		Amount Available	224
			<u>5,975,000</u>

Agreement #	Ministry	Commodity Distribution	Obligated Amount
K-029 FY 1975 (cont)	Industry	Welding Equipment	346,316
		Trucks/Rear Dump	703,991
		Crane, Hydraulic, Truck	128,160
		Crane, Hydraulic	77,913
		Tractors & Spare Parts	9,958,140
		Tires	451,880
		Acetate Tow	9,990,875
		Engines, Marine, Diesel	24,963
		Crawler Mounted Drill	95,727
		Diesel Power Shovels	504,297
		Tire Building Machinery	2,111,880
		Tire Plant Machinery	902,267
		Batteries	84,782
			<u>25,380,191</u>
		Obligated Amount	<u>24,345,000</u>
		35,191	
	Supply	Tallow	10,299,370
		Tallow/Freight	294,111
		Amount Available	<u>56,519</u>
			<u>10,650,000</u>
	Transport	Buses and Spare Parts	47,003,954
		Export Fees	18,414
		Amount Available	<u>7,632</u>
			<u>47,030,000</u>
	Suez Canal Authority	Crane & Accessories	467,655
		Dredge	798,070
		Amount Available	<u>4,275</u>
			<u>1,270,000</u>

Agreement #	Ministry	Commodity Distribution	Obligated Amount
K-027 FY 1975	Electricity	Cable, Underground	983,505
		Cable, Power & Access.	6,847,400
		Buses & Spare Parts	517,389
		Truck, Firefighting	681,733
		Tractors	403,920
		Trucks, Forklift	456,467
		Spare Parts, Electfical	793,760
		Street Lighting	708,967
		Turbine Rotors	3,135,192
		Compressor & Spare Parts	703,443
		Water Purifying Mach.	245,155
		Mobile Substation	731,571
		Generators, Mobile, Diesel	549,755
		Cranes	542,300
		Winches, Diesel	110,557
	Spare Parts/Gas Turbine	249,998	

Agreement #	Ministry	Commodity Distribution	Obligated Amount
K-027 FY 1975 (cont)	Electricity (cont.)	Trucks, Water Tanker/Spr.	106,425
		Amount Available	640,222
			<u>19,900,000</u>
	Industry	Woodpulp	5,950,863
		Amount Available	137
			<u>5,951,000</u>
	Irrigation	Herbicides	700,000
	Housing	Refractories, Brick	1,026,189
		Compressor & Sp. Parts	114,230
		Front End Loader	517,574
		Grinding Media	319,072
		Welding Electrodes	42,880
		Chains & Shackles	400,263
		Trucks, Rear Dumper	700,672
		Spare Parts/Compressor	43,434
		Spare Parts/Shovel	155,263
		Obligated Amount	<u>3,300,000</u>
			19,577
	Supply	Tallow	29,965,484
		Freight/Tallow	1,150,915
			<u>31,116,399</u>
		Obligated Amount	<u>30,792,000</u>
			324,399
	Trade	Steel Bars	700,596
		Steel Tubes	86,853
		Zinc Ingots	98,901
Steel Wire Rope		245,552	
Machine Tools		285,598	
Pump/Spares		128,837	
Refrigeration Equipment		380,426	
Milling Machine		90,220	
Buses & Spare Parts		790,953	
Scientific Instruments		387,190	
Grinder, Cylinder Head		31,969	
Bench Grinders & Drills		51,311	
Grinding Wheels		178,370	
Generators/Elec. Welder		45,599	
Batteries		65,479	
Circuit Breakers		72,474	
Trucks/Pickup		2,451,446	
Crane/Truck Mounted		373,677	
Cranes, Hydraulic		233,237	
Scientific Instruments		387,190	
Tires	114,780		
Generating Sets, Diesel	287,928		
	Amount Available	2,414	
		<u>7,491,000</u>	

Agreement #	Ministry	Commodity Distribution	Obligated Amount
K-027 FY 1975 (cont)	Transport	Engines, Marine, Diesel	240,000
		Card Punch Machine	18,800
		Microwave Equipment	320,928
		Amount Available	<u>20,272</u>
	Suez Canal Authority	Dredge	<u>600,000</u> 1,200,000

Agreement #	Ministry	Commodity Distribution	Obligated Amount
K-026 FY 1975	Education	Remote Sensing Equip.	1,192,180
		Amount Available	<u>2,820</u>
			<u>1,195,000</u>
	Electricity	Spare Parts/Electrical	1,552,766
		Obligated Amount	<u>1,506,000</u>
			<u>46,766</u>
	Industry	Woodpulp	5,115,614
		Acetate Tow	1,998,326
		Plastic Resins	1,053,235
		Rubber	998,637
		Graphite Electrodes	2,999,931
		Tinplate	5,912,979
		Kraft Liner	3,986,163
		Kraft Paper	4,995,995
		Cigarette Paper	1,999,557
		Formaldehyde	597,892
	Plastic Pellets	<u>173,660</u>	
			<u>29,831,989</u>
		Obligated Amount	<u>24,968,000</u>
			<u>4,863,989</u>
Supply	Tallow	25,179,293	
	Trucks, Tractors & Spares	12,639,933	
	Vehicles	1,208,551	
	Freight, Tallow	1,925,539	
	Freight, Trailers	2,324,618	
	Trucks, Dump	871,386	
	Spare Parts, Auto	400,000	
	Semi-Trailer	1,298,049	
	Amount Available	<u>33,621</u>	
		<u>45,881,000</u>	
Transport	Engines, Marine, Diesel	1,464,792	
	Obligated Amount	<u>1,400,000</u>	
		<u>64,792</u>	

APPENDIX B

## APPENDIX B

### AUTOMATION AVAILABILITY CONSIDERATIONS

#### A. Known Automation Requirements

Two automation support capabilities which would be required candidates for the future computer system operation of the Department of Economic Cooperation with the USA (DECUSA) would be word processing and data processing. DECUSA currently has 10 clerical personnel who perform repetitive typing functions, and an automated word processing capability would reduce both clerical and professional work effort considerably. Also, the liaison response time between the various ministries and DECUSA, and USAID and DECUSA would be reduced by the installation of an automated word processing capability because memoranda could be developed faster. Automated word processing support is needed in both the Arabic and English languages, and attached printers must be able to print both languages.

DECUSA's data processing requirements are to produce program/project scheduling reports, training reports, commodity delivery reports and funding reports. The information in these reports must be initially stored and manipulated for different presentations. Some type of graphic printout capability would also be required on reports to project planned versus actual expenditures. Graphic reporting would be more meaningful for upper echelon government management personnel than tabular report forms, and a full-scale computer graphic output capability should be considered. Finally, any future DECUSA automation capability would be required to receive data from the USAID Wang computer system via some type of machine readable media, because large amounts of the detailed assistance monitoring information will be stored in machine readable form at the USAID Wang installation.

#### B. Telecommunication Considerations

A major problem exists in Cairo regarding the public telephone system and the reliability of that system for use as a telecommunication vehicle. Although an automation capability might be provided to DECUSA by the use of another A.R.E. computer system with a telecommunication link to DECUSA, the typical reliability and the extent of "noise" of the telecommunication lines in Cairo rule out the alternative of DECUSA sharing a computer system with another organization.

#### C. Electric Power and Air Conditioning Considerations

Three factors are important in respect to electric power and air conditioning needed for DECUSA automation support. First, the power being provided by the local electrical power utility organization is subject to frequent power outages and "brown outs". Thus, the public power utility cannot provide the normally expected power supply reliability needed for a computer installation at DECUSA. Second, the size of the computer being discussed will require typical U.S. business office air conditioning,

which the DECUSA office space on the seventh floor at 8 Adley Street in Cairo does not have. Third, installation of air conditioning, computer equipment with disk storage, an Uninterruptable Power Supply (UPS) device, and other types of equipment will place a heavy load on the existing electrical power circuits. Consequently, the addition of computer equipment might necessitate major rewiring at the 8 Adley Street office in order to provide sufficient power to the DECUSA office space.

#### D. Scope of Computer System to be Considered

With the information discussed above regarding DECUSA automation requirements and environmental considerations, a general type of applicable automation capability can be defined to satisfy its total requirement. First, the associated telecommunication problems in Cairo preclude DECUSA from satisfying its automation needs with the use of remote computing power of another organization. Second, the small scope of the extent of the data processing requirement, that of a monthly reporting process, precludes the need for a large computer system. Third, the combination of word processing and data processing capabilities cause the alternative approach of installing a minicomputer to be the most reasonable general option. Given that minicomputers can have Data Base Management System (DBMS) software packages installed, and the availability of a DBMS would be beneficial in the development of the DECUSA data processing requirement, the minicomputer installation in DECUSA office space appears to be the most valid general solution to satisfying DECUSA's total automation requirements.

The installation of a minicomputer does cause environmental considerations to be placed on the type of office space needed by DECUSA. Although the minicomputer installation does not demand that raised flooring and other expensive office space alterations be made, the equipment cooling requirements require that at least normal office air conditioning be installed. Also, power outage problems in Cairo would warrant the use of UPS equipment. With such equipment requirements and associated power requirements, it is highly doubtful that the current DECUSA office space on the seventh floor at 8 Adley Street in Cairo could support a future minicomputer installation. Because DECUSA has indicated that it would strongly consider relocation from its current space, the minicomputer installation approach is the alternative being pursued.

#### E. Available Computer Equipment

JWK conducted a small survey of computer manufacturers to determine whether any computer manufacturers with existing maintenance facilities were available in Cairo and could satisfy DECUSA's requirements. The firms were asked whether they could supply minicomputers with Arabic and English printers, provide both word processing and data processing software capabilities, and provide at least a minimal graphic output capability. Also, because the equipment would be procured via U.S. assistance funds, the equipment had to be made by American firms.

The first firm to be contacted was Balsam Engineering, Ltd., which represents Wang Corporation in Egypt. Wang computer equipment has both word processing and data processing capabilities which can be performed concurrently on the same system. Also, software available with the VS operating system allows data prepared by automated word processing to be captured directly by Wang data processing software. The word processing Cathode Ray Tube (CRT) terminal provided by Wang can display both Arabic and English concurrently. The two minor drawbacks to the Wang system are that: (1) the Arabic word processing software is not yet completely operational, and (2) the Wang graphic capability does not appear to be extensive.

Regarding the Wang Arabic word processing capability, Wang announced and installed an Arabic word processing capability in the field, but the package was recalled for adjustments. In discussions with the Balsam salesman, JWK learned that Wang intends to announce an Arabic word processing capability for its equipment in December 1982 for installation in March 1983. Because the market for automated Arabic word processing is extensive, JWK assumes that Wang's intentions to be able to provide an Arabic word processing capability is sincere. The exact date for availability is open to question, although March 1983 is reasonable considering that an earlier package had been in use at one time in the past.

Although the Wang graphics capability is not extensive, sufficient data processing capability exists in the Wang general purpose software packages to be able to develop a suitable funding graphic printout on funding reports. The facts that the Wang equipment is used by USAID, and existing USAID software could be adjusted to support DECUSA, make Wang equipment a prime candidate for the future DECUSA computer system. Also, the TOTAL DBMS package can be procured with Wang computer equipment.

The second firm which was contacted in Cairo was TEA Computers. TEA Computers represents both CPT, a known American word processing company, and Data General Corporation, the second largest American independent mini-computer manufacturer. CPT has both Arabic and English word processing capabilities, and the Data General computer equipment has all the necessary data processing and graphic capabilities needed by DECUSA. The TEA representative assured JWK that the CPT equipment can communicate directly with Data General equipment. The question arises regarding the method of interface between the USAID Wang equipment and Data General equipment. Interface is definitely possible via magnetic tape, and most probably a "hardwired" telecommunication link interface could be used with a single Wang terminal. The single Wang terminal would accept word processing cassettes and transmit the contained data to the Data General minicomputer. The preferable interface would be via magnetic tape.

The major capability advantage provided by TEA is the fact that their Arabic word processing capability has been operational in the field for a period of time, and works! A number of differences between English and Arabic exist that it is no small task to convert English language word processing software to a viable Arabic word processing package. For

example, Arabic vowels appear above and below consonants. Also, an Arabic consonant character differs, depending whether it is at the beginning of a word or in the middle of a word. The CPT word processing package handles all such Arabic language characteristics, and has been field tested and modified since its original availability. In summary, it is a timetested software package, and the only timetested Arabic word processing software package available on American computer equipment!!

The TEA Company equipment has a number of other benefits related to the DECUSA requirement. The Data General equipment is quite powerful from a data processing standpoint and has the capability to have a DBMS package installed. It also is capable of providing extensive graphics output. Of the three companies solicited, the equipment represented by the TEA Company is the most suitable from an equipment standpoint for overall DECUSA requirements.

The third company contacted was Ghiza Systems Engineering, which represents Digital Equipment Corporation (DEC), the world's largest mini-computer company. DEC produces both word processing and data processing equipment. DEC equipment can perform word processing and data processing concurrently on the same system, and DEC computers have sufficient capabilities in both data processing and graphic output. Also, because JWK currently has both DEC and Wang equipment installed, and has, in fact, provided interface between DEC equipment with Wang word processor, the potential interface between the USAID Wang system and DEC equipment is known to work. The drawback with DEC equipment is that an Arabic word processing capability is not yet available.

To summarize the discussion on computer equipment availability, at least three firms provide computer equipment and maintenance in Cairo and can satisfy most, if not all, of DECUSA's requirements. The positive and negative aspects of the three firms are not clear enough to allow selection of a single firm to satisfy DECUSA's future requirements. A major consideration in a possible sole source justification is the overall capability of the future Wang Arabic word processing software package to be available in March 1983, and the eventual DECUSA computer installation date requirement. In the event that installation is to be within the next six months, the TEA Company equipment alternative of Data General and CPT hardware may well be the best selection for DECUSA. With more analysis on the capabilities of the Wang equipment, a sole source justification for procuring Wang equipment might be valid, especially if delivery of equipment is more than six months from this writing.

#### F. Equipment Costs

JWK discussed costs with the computer manufacturer representatives, and was only able to obtain general estimates because optional peripheral equipment capabilities could not be definitized. Also, the computer representatives were reluctant to quote exact prices without written specifications. It appears that the Wang computer equipment with the word processing terminals is in the range of \$100,000 to \$150,000, whereas the Data General/CPT installation was slightly higher, perhaps \$150,000 to 200,000. Neither

Manufacturer representative discussed proprietary software costs which would be appreciable if a proprietary DBMS software package such as TOTAL is supplied. A valid equipment and software cost estimate is \$150,000 to \$200,000. Estimates for UPS equipment also varied, but a figure of \$50,000 to satisfy the DECUSA UPS requirement seems valid. Both equipment manufacturer representatives stated the maintenance costs are 10% of the purchase price per year, and also stated that installation is included as part of the total price.

DECUSA has a requirement for data reduction equipment and has indicated an interest in using a microfiche system to store and retrieve archival data. JWK's initial contacts determined that a wide variety of data reduction/retrieval systems exist, and the two basic types use either microfiche or microfilm storage. Microfiche storage is about one-tenth the size of microfilm storage, and microfiche is more efficient for retrieval. Drawbacks to using microfiche equipment are cost and additional effort for document conversion. Discussions with a large data reduction user indicate that a total microfiche system (camera, reader, etc.) for DECUSA's needs would be \$40,000 to 50,000, and a comparative microfilm system about \$20,000 to \$25,000. Before any final decision is made, a thorough analysis should take place as to which type of system, with which features, should be used. Regarding microfiche equipment, data reduction can be contracted, and retrieval equipment costs can become closely in line with microfilm equipment.

#### G. Available Application Software

Prior to visiting DECUSA in Egypt, JWK reviewed several research project monitoring systems, to determine whether existing applications software might be available for possible use at DECUSA. The two packages reviewed were available on large scale IBM-compatible equipment and used general purpose Data Base Management System (DBMS) software as an implementation tool. The specific requirements which DECUSA has for its own system, and the need for word processing support, precluded the alternative of using a large system in a time-shared operation; and the installation of a large scale computer system cannot be justified by the size of DECUSA's automation requirement. Also, no generalized software package exists today which will perform the functions needed by DECUSA and produce the same output reports in both Arabic and English. Consequently, at least portions of DECUSA's data processing requirements will have to be satisfied by application software development.

Regarding potential sources of software, USAID has developed application software which definitely could be used by DECUSA. Also, DBMS software is available on all three of the computer systems described, with the TOTAL DBMS package available on the Wang equipment. The possibility is very strong that most of the applications software required by DECUSA might be implemented using general purpose software.