DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service
Centers for Disease Control

Memorandum

Date: October 30, 1986

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Subject: Foreign Trip Report (AID/RSSA): Egypt, October 19-November 7, 1986

To: James O. Mason, M.D., Dr.P.H.
Director, CDC
Through: Assistant Director for Science, CHPE

SUMMARY

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SUMMARY

The primary purposes of this consultancy were to evaluate the logistics reporting systems (CIIS) of the Egyptian family planning program and to assist the Egyptian Pharmaceutical Trading Company (EPTC), which operates the system, in preparing a request for assistance to continue its operation. Although the CIIS has problems, it produces valuable information, and it should be continued. A request for operation budgeted at LE 155,000 during 1987 was prepared. In addition, we recommended that the system be integrated into a routine management information system for the program.

During the consultancy, we identified several problems with the family planning logistics system and recommended that a thorough evaluation be conducted, problems identified and corrected, the system be documented in a supply manual, and all personnel with supply responsibilities be trained.

I. PLACES, DATES, AND PURPOSE OF TRAVEL

On September 29, 1986, Mr. Terrence Tiffany, USAID/Cairo, contacted Dr. Leo Morris, Chief, PEB, by telephone to request assistance in assessing the Egyptian Contraceptive Inventory and Information System (CIIS) as to whether or not the CIIS should be continued and, if so, what input from USAID would be required (See Cairo cable 22956, October 5, 1986). In order to accomplish this purpose, it was necessary to review several documents (See Attachment 1) and interview program officials. Mr. Graves and Dr. Michael visited several program locations at different administrative levels. Mr. Felling analyzed

the computer operations. Based upon the information obtained, we assisted USAID and Egyptian Pharmaceutical Trading Company officials in the preparation of a proposal to continue the CIIS (See Attachment 2). In addition, projections of contraceptive needs were reviewed and updated (See Attachment 3).

This was the fourth logistics-related trip to Egypt under the CDC/AID RSSA (See CDC Foreign Trip Reports dated May 1, 1977, February 27, 1979, and November 13, 1981).

This travel was at the request of AID/S&T/POP/FPSD and USAID/Cairo and was in accordance with the Resource Support Services Agreement (RSSA) between AID/S&T/POP and DRH/CHPE/CDC for Mr. Graves and the centrally-funded contract with JSI for logistics assistance for Mr. Felling.

II. PRINCIPAL CONTACTS

A. Egyptian Ministry of Health (MOH)
   1. Family Planning Program
      (a) Dr. Moshira El Shaffie, Deputy Director, USAID FPP, MOH
      (b) Dr. Farouk Gaafar, Director of Family Planning Department, MOH

   2. Egyptian Pharmaceutical Trading Company (EPTC)
      (a) Dr. Abdel Aziz Ghazal, Chairman
      (b) Dr. Abdel Aal Awad, Head of Information Sector
      (c) Dr. Swelem M. Moustafa, Director, Computer Center

   3. Port Said Governorate, MOH
      (a) Dr. Fathi Hendawi, General Director of Health Directory
      (b) Dr. Khadiga Asem, Director, Pharmacy Department
      (c) Dr. Mohsen Mohamed Mostafa, Director, EPTC Branch
      (d) Mr. El Manakh, MCH Center

   4. Qalyubiya Governorate, MOH
      (a) Dr. Mahmoud Mohamed Abdalla, Director Curative Health Department
      (b) Dr. Abdel Haliem Metwalli, Director, Pharmacy Department
      (c) Dr. Mohamed El Batsh, Regional Director, Lower Egypt, EPTC
      (d) Dr. Mohamed Bayami, Director, EPTC Branch

   5. Giza Governorate, MOH
      (a) Dr. Mounier El Sherief, Undersecretary of Health
      (b) Dr. Atiat Abdel Hamid, Director, Pharmacy Department
      (c) Dr. Anwar Ahmed Nwair, Director, Nazlet El Siman Health Center
      (d) Dr. Hani Ibrahiem Shaheen, Director, EPTC Branch.

B. Egyptian National Population Council
   1. Dr. Mounir El Tawil, Consultant in Community Health

C. USAID/Cairo, Human Development Cooperation/Population (HRDC/P)
   1. Mr. Terrence Tiffany, Population Officer
   2. Dr. Fayek T. Michael, Program Specialist
   3. Ms. Charlotte Cromer, Population Advisor

D. Consultants
1. Ms. Dorace A. Trottier, Senior Programmer Analyst, Family Health International
2. Ernest Petrich, Private Consultant on Population Project Paper

III. BACKGROUND*

Contraceptive knowledge and approval is almost universal in Egypt, and 30 percent of currently-married women (age 15-49) practice family planning, with 93 percent of these using modern methods. The preferred method is oral contraceptives, followed by IUDs and others.

Contraceptive services are provided by the Ministry of Health, the Egyptian Family Planning Association (EFPA), Family of the Future (FOF, a social marketing program), a few other nongovernmental organizations, and the private sector.

The private sector (mainly pharmacies) provide 80 percent of orals, condoms, and vaginal foaming tablets, and most of the clinical methods (mainly private physicians and clinics).

All oral contraceptives except Norminest (the oral distributed by FOF) are manufactured in Egypt; other contraceptives are imported. The main distributor of contraceptives is the Egyptian Pharmaceutical Trading Company (EPTC), a government-owned corporation. EPTC maintains central warehouses in Cairo and 43 branch warehouses throughout the country. Contraceptives are sold to pharmacies, MOH Governorate stores, and EFPA clinics from these branches. FOF has their own central warehouse and distribution network.

In the MOH and EPFA programs, contraceptives are sold to users at subsidized prices with orals and a pack of three condoms selling for LE0.05 (official exchange rate US$1 = LE 1.36). Consideration is now being given to increasing the price. Prices are higher in the FOF program.

In addition to distributing contraceptives, the EPTC maintains a logistics data base called the Contraceptive Inventory and Information System (CIIS). Manufacturers, EFPA, and FOF report to this system and it, therefore, should include all contraceptives distributed in the country.

IV. ACTIVITIES AND OBSERVATIONS

In order to facilitate the work of this consultancy, USAID/Cairo sent samples of some of the output from the CIIS and a copy of the draft proposal for continuation of the project to CDC/Atlanta where they were reviewed by both consultants. Additional documents were provided upon arrival. Also, Dr. Fayek T. Michael, HRDC/P was assigned to work with us throughout our stay.

*Most of the information on family planning in Egypt is taken from Fertility and Family Planning in Egypt, 1984--the report of the most recent Contraceptive Prevalence Survey conducted by the Egyptian National Population Council and Westinghouse Public Applied Systems.

The CIIS was designed and operated over 3 years through a contract with Price Waterhouse Khattab. The contract expired in December 1985 and since that time, the system has been supported by EPTC on an ad hoc basis. For various reasons, EPTC could not allocate a budget for the continued operation of the CIIS, and in late September 1986 they submitted a proposal for a 3-year extension of the project to USAID/Cairo. This proposal contained a request for USAID support totalling LE 198,748 annually.

As it is presently structured, the inputs to the CIIS system are:

1. Data from invoices of all sales from all EPTC Branches. The data include invoice number, date, branch, recipient, product, quantity, and price.

2. Inventory reports from all EPTC Central and Branch warehouses (monthly).

3. Reports of inventory and contraceptive distribution from FOF, EFPA, and other nongovernment organizations (monthly).

4. Inventory and manufacturing schedule reports from manufacturers and/or importers (monthly or as appropriate).

The computer converts contraceptive sales to couple-years-of-protection (CYP) and produces tables, line graphs, and pie charts on CYP coverage for the country and by:

1. Governorate
2. Type of contraceptive
3. Type of recipient
4. Distributer of the contraceptives

The tables also show the percent change by month and year (most recent 12 months). In addition, there is a table showing the quantities of each contraceptive (by brand name) sold during the month, by type of recipient. Tables are also provided for each governorate similar to 2, 3 and 4, above as well as sales by brand name.

The system produces tables which reflect the forecasts for future needs of each contraceptive in January and July of each year. These tables are similar to the Contraceptive Procurement Tables used by AID/W except that they cover 4 years, broken down into semesters. The tables assume 100 percent of the next semester's use to be maintained as inventory. The system also produces monthly inventory and sales reports for all EPTC warehouses.

From this brief description we see that the system can produce a wealth of valuable management information. Some examples are: quantities of stock on hand relative to demand, trends in demand for certain brands and/or types of contraceptives, and indicators related to performance by the different service provider organizations and Governorates.

One of the problems with the system is that it uses sales to "outlets" as a surrogate for sales to users or quantities dispensed. Actually not all sales are to outlets. For example, in the MOH program the quantities reported are those sold to MOH Governorate warehouses. These are, in turn, sold to Markaz (district) warehouses (in most cases) before being sold to MOH clinics and other outlets. There are no reports in the system to account for the inventory of contraceptives being held at outlets or at MOH warehouses at Markaz and Governorate levels and no reports for actual sales to users at any level. The Service Statistics System (SSS) reports sales to users, but reporting is incomplete and of questionable accuracy. We were unable to find copies of output from the SSS, and we conclude that the data are not being analyzed.

When we interviewed program officials at Central, Governorate, Markaz, and outlet levels of the program, we discovered a number of problems with the movement of contraceptives through the system which may distort reported demand for the products managed by the system. Some of these problems and their possible effects are as follows:

1. As mentioned in Section II of this report, all contraceptives are sold to users from all outlets, and money collected is used to replace the products sold. In some cases, this money is used for specific replacement, i.e., money collected from the sale of a specific brand of orals must be used to replace the same quantity of the same brand, while in other cases the money can be used to purchase whatever is desired up to the amount of money available. But the product desired might not always be available, so a second choice might have to be purchased. At one MCH center, we were told that there was demand for foaming tablets, but the pharmacist refused to order them because "we do not stock that item." At another Governorate, we were told that contraceptives can only be issued once every 2 months. If a stockout occurs, the outlet must wait to obtain resupply, and clients must also wait or chose an alternate source of supply, brand, or method.

   Also, it is difficult to increase the basic stock at any location. If demand increases so that the originally estimated 3 months' supply is insufficient, permission must be obtained from the MOH Central Office to increase the base; the clinics do not have extra money to purchase contraceptives since their income is limited to collections. The EPTC Branches will not accept items of low demand in exchange for more popular items.

2. There is no provision for establishing money accounts in the system. The units must, therefore, spend the exact amounts collected every time they buy contraceptives. An example of the problem was described to us as follows:

   One MOH Governorate warehouse wanted to purchase 3,000 CuT IUDs. They presented a check for LE 3,000 to the EPTC Branch. Since the Branch had only 400 CuT IUDs, they could not provide the 400 now and 2,600 later, so none were issued. They wanted to issue LE 2,600 worth of other items to fill the amount of money available, but the other items were not needed at the time the purchase was attempted. The Governorate warehouse must await the arrival of the full amount of IUDs from Cairo before the transaction can be completed.

3. There is no provision for managing expired products. If, because of stock imbalances caused by shifting product demand or other reasons, a unit has an expired product, the amount is simply lost or must be replaced through a request to the Central MOH Office.

4. Another Governorate reported that they had 10 new clinics and the EPTC would not issue the basic 3 months' stock for them. They said they did not know how to go about getting stock for these new clinics.

5. Collections from the sale of contraceptives are used for staff incentives. The system does not work very well because of the small amount involved and the time required for administering the system. It is felt by some officials that the incentive system introduces service provider bias into the program because the amount collected for IUDs is greater than other methods.

V. CONCLUSIONS AND RECOMMENDATIONS

Since we visited only a few locations in three Governorates, we speculate that the above list represents only a few of the problems related to the supply system.
In any event, these problems can result in serious detrimental effects on the MOH Family Planning Program. The deviation in true demand from reported sales might be negligible, but we will not know until a "full supply" situation exists throughout the country; by this, we mean that all methods and brands available to the program exist in all outlets in sufficient quantities that stockouts never (or seldom) occur. This can only happen if constraints on the movement of all contraceptives are removed.

Our investigation into the logistics system was, of necessity, superficial. We therefore recommend that a thorough evaluation of the existing system be conducted as soon as feasible. To expand on this recommendation we suggest the following sequence of events:

1. Conduct a thorough evaluation of the logistics system; identify and correct problems.

   This means examining all phases of logistics including procurement, shipping, storage, documentation, and reporting at all program levels and in all programs (if desired). We would travel to the Governorates and examine how supplies are managed in clinics, district stores, Governorate stores, EPTC branches, and any other locations at field levels. We would also examine procedures at the central warehouses of EPTC, FOF, manufacturers, and others. We would then document how the system is presently structured, describe problems, and recommend solutions. The evaluation will take 4-6 weeks.

   It is very important that we work with a local counterpart; perhaps more than one would be needed, i.e., one from MOH and one from EPTC. The counterparts should be responsible program officials with authority to make changes. Perhaps an official could be assigned by the MOH to coordinate logistics functions throughout the country. These persons could assist the team in identifying local constraints and practices that may be difficult or impossible to change and could also serve as resource persons in following up on the implementations of the recommendations. It will probably require 6-12 months to implement the recommendations.

2. Write a manual for supply management at all program levels. This manual should cover procedures for all eventualities, not only routine matters, so that all program personnel with responsibility for supply management (including supervisors) can be guided in routine operations and problem-solving.

   We have found that many of the problems related to supply management result from missing or unclear instructions. Therefore, we propose that a series of manuals with specific instructions for a given program level or location be developed. That is, the manual for clinics would not contain instructions for districts, Governorates, or higher program levels. Ideally, the counterparts would be the authors of the manuals with consultants serving as advisors. After the manuals are written, they should be distributed to the field as appropriate, being sure that supervisors receive copies. It will require about 4 weeks to write the manual. This should take place as soon as possible after recommendations have been implemented and any problems with the new procedures identified and solved.

3. After the supply manual has been written, printed, and distributed, design training courses (with the manual being the core document) so that all personnel can be properly trained.

   The counterparts should follow up on any changes in practices that result from the issuance of the manuals. They should identify problems such as unclear instructions that remain in the system. The consultants should return in 4-8 months after the manuals have been issued and, in cooperation with the counterparts and training personnel, design training courses on supply management for all program personnel with supply responsibilities. Training materials would then be produced. This will require about 4 weeks.

4. Conduct training courses in supply management alone, or as a part of a management training program.

   After the training courses have been designed, the counterparts will reproduce materials in sufficient quantities for training all personnel and prepare a training schedule. The consultants would return and assist by training trainers and by participating in a few training courses.

   Our personal preference is to include logistics training in general management training courses because of the importance of logistics in general management and because of the interrelationship of logistics data and other management information. This will be 2-4 months after the training courses have been designed and will require 3-4 weeks.

5. Closely supervise the system to detect any deficiencies and make corrections as needed. It must be recognized that the family planning program is dynamic, and it will be necessary to adjust management procedures as the program moves forward.

This will be done by the routine program supervisory staff and monitored by the counterparts. If problems arise that cannot be managed locally, the consultants could be called on for assistance.

6. Adapt the logistics training procedures so they can be used as an integral part of future preservice training for newly-appointed staff.

   This may be done in the initial course design; but, if it has not, it is a very important step. Preservice training is where logistics management is recognized as a very important part of program management. Preservice training should be a routine training activity, because personnel usually move up in the system, and some move out to be replaced by others. The consultants could help with this, if needed.

The CIIS

The CIIS is a valuable system for producing management information and, although it is expensive to operate as presently designed, it should be continued. Output from the system should be distributed to all offices that need the information. Consideration should be given to integrating the CIIS into routine program operations and expanding it to include other data elements so that a true management information system (MIS) can evolve. A Project Agreement for an MIS has been written with UNFPA. The agreement has not been funded and, because of budget problems in UNFPA, it will probably be delayed for quite some time. However, in addition to funding continued system operation, efforts should be made to address some of the problems with the existing system. This effort should be coordinated with the implementation of the other recommendations in this report to ensure a compatible system.

One of the deficiencies of the CIIS is that true sales to users are not reported. This information is being reported in the Service Statistics System (SSS), but we were not able to evaluate the accuracy of the SSS. This system should be evaluated and, if data on sales to users is of acceptable accuracy, the information should be integrated into the CIIS to form new numerators for CYP calculations. These could be compared to those currently produced to see what, if any, deviations exist. They could also be compared to the reported number of family planning clients and to the results of contraceptive prevalence and/or other surveys.

Another problem with the CIIS is that the input and computer programs are cumbersome and difficult to use. The programs are particularly difficult to modify when changes in the number of locations served, CYP factors, new products, etc., are necessary. In addition, the significant file manipulations required to produce reports, along with the duplication of monthly and cumulative data in many separate files, introduce a host of potential trouble spots into the system. The programs and input documents should be thoroughly examined and modified as necessary to improve efficiency. The programs were copied on disks and brought back to JSI for examination and possible corrections.

Finally, the CIIS output is not used efficiently. For example, the reports show many cases where warehouse stocks are out of compliance with program policy, but there is no evidence to show that corrective action is being taken. The CIIS output should be examined to see what changes in format would make it easier to use. Also, users of the system should be trained in how to use the reports, and this training should be a part of the basic logistics training as proposed above.

Jack L. Graves, M.P.H.

William D. Felling

ATTACHMENT 1
Documents Reviewed

1. Fertility and Family Planning in Egypt, National Population Council and Westinghouse Public Applied Systems. Findings of the 1984 Egypt Contraceptive Prevalence Survey.

2. The Monetary Incentive System for Contraceptive Sales, May 1985, Price Waterhouse Khattab.

3. (a) System Wide Inventory and Forecasting Semi-Annual Report, January-June 1986, EPTC, Computer and Information Center.

   (b) Contraceptive Inventory and Information System, Monthly Reports, September 1986, and

   (c) Summary Report, September 1986.

   (d) CIIS Master Run Book. EPTC, Computer and Information Center.

4. Background information and current status report for contraceptive needs (Memorandum) October 10, 1986, Fayek T. Michael, USAID/Cairo/HRDC/P.

5. Proposal for Ongoing operation of the CIIS, Price Waterhouse Khattab, March 1985.

6. Project Agreement between GOE and UNFPA for Strengthening and Improving Family Planning Service Statistics, December 1985 (not funded).

ATTACHMENT 2

(Note: This attachment contains the budget and request for assistance. Other material in the request was descriptive and is available at CDC, JSI or USAID/ Cairo.)

CONTRACEPTIVE INVENTORY

AND

INFORMATION SYSTEM

PROPOSAL FOR OPERATION

1987

Submitted by:

The Egyptian Pharmaceutical Trading Company

To:

The United States Agency for International Development, Cairo

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Proposed Budget and Notes

The proposed budget for the next year of operation of the CIIS system is detailed below. Clarification of each line item follows the budget.

	1987	AID Support	EPTC or Other
Personnel	70,886	70,886	-
Rent	23,040	-	23,040
Maintenance	14,860	14,860	-
Materials and Supplies	25,740	25,740	-
Travel	12,000	12,000	-
Training	10,800	10,800	-
Vehicle Operation	6,080	6,080	-
Miscellaneous	6,000	6,000	-
Total Direct Costs	169,406	146,366	23,040
Overhead (10%)	16,941	8,634	8,307
Total Project Cost	186,347	155,000	31,347

Personnel

Current (1986) salaries and position descriptions are detailed in Attachment 2. These salaries include base pay, incentive pay, and fringe benefits. Annual increases averaging 15 percent are anticipated in each of the next 3 years.

Request for Assistance

Through this proposal, the EPTC is requesting USAID support for the CIIS for 1 year beginning January 1, 1987. The specific amount requested is LE 155,000.

EPTC or other Ministry of Health offices will support the remaining part of the budget. In addition to financial support, EPTC requests that USAID provide technical assistance in evaluating the CIIS system with the goals of:

1. Increasing the operational efficiency of the system,

2. Simplifying the output to make it easier for program managers to use, and

3. Determining how the system might be made a part of an overall management information system.

EPTC further requests, that at the completion of the project year, USAID consider further support for the project. The term of this proposal has been limited to 1 year so that the long-term course of the CIIS system can be considered in light of the pending proposal from the National Population Council to UNFPA to establish an integrated family planning management information system and the new family planning project paper now being prepared by USAID. This 1-year proposal will allow the system to continue operation while the scope of these new projects, and their relationship to the CIIS system, are clarified.

ATTACHMENT 3
Contraceptive Procurement Tables for AID-Supplied
Orals and Condoms

(Note: These will be updated, and tables for other contraceptives will be prepared in February 1987.)

FY 1988 CPT
COUNTRY: EGYPT
PROGRAM: FOF
PROJECT: 000-0000
PRODUCT: 52CG - CONDOM 52MM COLORED BLUE/GOLD
SOURCE OF DATA FOR BEGINNING-OF-YEAR STOCK:USAID/CIIS
TABLE YEAR: 1986
START NET DEFICIT YEAR: 1986

	CALENDAR YEARS					
	1986	1987	1988	1989	1990	1991
1. BEGINNING-OF-YEAR STOCK (PLEASE READ INSTRUCTIONS TO FILL IN THIS LINE ITEM)	4555	13312	14540	16337	17971	
PLUS						
2. NEW SUPPLY OF SAME PRODUCT						
(A) AID SUPPLIES RECEIVED 1986 TO DATE	11238					
(B) ADDITIONAL AID QUANTITIES SCHEDULED FOR SHIPMENT BUT NOT YET RECEIVED		8136				
(C) OTHER SOURCES OF SUPPLY OF SAME PRODUCT (HOST COUNTRY/OTHER DONORS)						
MINUS						
3. ESTIMATED PRODUCT USE/SALES/DISTRIBUTION	12670	13312	14540	16337	17971	19768
EQUALS						
4. END-OF-YEAR STOCK	3123	8136	0	0	0	
MINUS						
5. DESIRED END-OF-YEAR STOCK LEVEL (EQUAL TO 100% OF ESTIMATED USE IN SUBSEQUENT YEAR)	13312	14540	16337	17971	19768	
EQUALS						
6. NET SUPPLY SITUATION/AID REQUIREMENT (NEGATIVE NUMBER SIGNIFIES ADDITIONAL SUPPLIES REQUIRED FROM AID; POSITIVE NUMBER SIGNIFIES NO AID REQUIREMENT)	-10189	-6404	-16337	-17971	-19768	

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FY 1988 CPT
COUNTRY: EGYPT
PROGRAM: MOH
PROJECT: 000-0000
PRODUCT: 52CS - CONDOM 52MM COLORED SULTAN
SOURCE OF DATA FOR BEGINNING-OF-YEAR STOCK:
TABLE YEAR: 1986
START NET DEFICIT YEAR: 1986

	CALENDAR YEARS					
	1986	1987	1988	1989	1990	1991
1. BEGINNING-OF-YEAR STOCK (PLEASE READ INSTRUCTIONS TO FILL IN THIS LINE ITEM)	12287	14563	15906	17872	19659	
PLUS						
2. NEW SUPPLY OF SAME PRODUCT						
(A) AID SUPPLIES RECEIVED 1986 TO DATE	3102					
(B) ADDITIONAL AID QUANTITIES SCHEDULED FOR SHIPMENT BUT NOT YET RECEIVED		14688				
(C) OTHER SOURCES OF SUPPLY OF SAME PRODUCT (HOST COUNTRY/OTHER DONORS)						
MINUS						
3. ESTIMATED PRODUCT USE/SALES/DISTRIBUTION	13860	14563	15906	17872	19659	21625
EQUALS						
4. END-OF-YEAR STOCK	1529	14688	0	0	0	
MINUS						
5. DESIRED END-OF-YEAR STOCK LEVEL (EQUAL TO 100% OF ESTIMATED USE IN SUBSEQUENT YEAR)	14563	15906	17872	19659	21625	
EQUALS						
6. NET SUPPLY SITUATION/AID REQUIREMENT (NEGATIVE NUMBER SIGNIFIES ADDITIONAL SUPPLIES REQUIRED FROM AID; POSITIVE NUMBER SIGNIFIES NO AID REQUIREMENT)	-13034	-1218	-17872	-19659	-21625	

FY 1988 CPT
COUNTRY: EGYPT
PROGRAM: FOF
PROJECT: 000-0000
PRODUCT: NRDS - OC NORIDAY 1+50 CSM PACKAGING
SOURCE OF DATA FOR BEGINNING-OF-YEAR STOCK:AID/CIIS
TABLE YEAR: 1986
START NET DEFICIT YEAR: 1986

	CALENDAR YEARS					
	1986	1987	1988	1989	1990	1991
1. BEGINNING-OF-YEAR STOCK (PLEASE READ INSTRUCTIONS TO FILL IN THIS LINE ITEM)	6301	4923	3475	1894	2042	
PLUS						
2. NEW SUPPLY OF SAME PRODUCT						
(A) AID SUPPLIES RECEIVED 1986 TO DATE						
(B) ADDITIONAL AID QUANTITIES SCHEDULED FOR SHIPMENT BUT NOT YET RECEIVED						
(C) OTHER SOURCES OF SUPPLY OF SAME PRODUCT (HOST COUNTRY/OTHER DONORS)						
MINUS						
3. ESTIMATED PRODUCT USE/SALES/DISTRIBUTION	1378	1448	1581	1797	2042	2320
EQUALS						
4. END-OF-YEAR STOCK	4923	3475	1894	97	0	
MINUS						
5. DESIRED END-OF-YEAR STOCK LEVEL (EQUAL TO 100% OF ESTIMATED USE IN SUBSEQUENT YEAR)	1448	1581	1797	2042	2320	
EQUALS						
6. NET SUPPLY SITUATION/AID REQUIREMENT (NEGATIVE NUMBER SIGNIFIES ADDITIONAL SUPPLIES REQUIRED FROM AID; POSITIVE NUMBER SIGNIFIES NO AID REQUIREMENT)	3475	1894	97	-1945	-2320	