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TRIP REPORT

Countries visited	:	Egypt, England, France, Jordan, Morocco, Tunisia
Dates	:	9 September - 9 October, 1986
Traveller	:	Russell J. Dionne
Purpose	:	To conduct an electronic technology applications survey
Trip Report No.	:	47

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EXECUTIVE SUMMARY

RONCO's objective in its family planning training project (PACII) is to improve family planning service delivery by increasing the number and effectiveness of family planning workers in the Near East/North Africa (NE/NA) region. In designing training activities to meet its objective, RONCO has plans to incorporate into the training process applications of microcomputer and video technology.

During several project development visits to the NE/NA region since October 1984, it became apparent to RONCO staff members that many organizations involved in the PAC II Family Planning Training Project have not yet had the opportunity to develop microcomputer competence or avail themselves of the potential benefits of this powerful and cost-effective tool. The same observations held true for video technology.

Before devising electronic technology training plans, however, hard data rather than first impressions were necessary. The purpose of the trip, then, was to obtain such data. The trip was a survey of PAC II family planning training institutions, as well as in-country institutions which could provide local technical support, and was conducted in order to provide information necessary in order to organize a regional training workshop on the use of computers and video technology in family planning training programs.

This survey trip was made in conjunction with RONCO's Regional Needs Assessment Conference held in Tunis from 1 through 6 September, 1986. Immediately before, as well as during the conference, RONCO received information which necessitated first a rescheduling of the original itinerary and then a restructuring of the survey into two separate trips: 1) survey work in Egypt, England, France, Jordan, Morocco, and Tunisia; 2) survey work in Turkey and Yemen. These changes were necessary because key contact persons were not available as originally scheduled.

The principal findings of the survey were:

Egypt

During the survey visit to Egypt, the most important observation was that the usefulness of electronic technology applications is appreciated by the management of family planning training institutions, but there is a conspicuous lack of

equipment at their disposal.

England

The International Planned Parenthood Federation (IPPF) believes that there is in the Family Planning Associations (FPAs) both a desire and a need to know about microcomputers and their uses. The IPPF would like for FPAs to use computers for management, administration, and reporting purposes, and recommends that something be done quickly in specific countries rather than wait for a region-wide project. The IPPF also believes that training in the use of video technology is desirable so that the technology be used effectively.

France

The French Minitel system may be an appropriate and cost effective technology for use by large family plannning training organizations in which access to data over distances is desirable.

Morocco

The survey in Morocco will have to be rescheduled because of project development work co-opting survey work during the visit.

Jordan

In Jordan, family planning and service delivery professionals are enthusiastic about microcomputer enhancements to their work. It is the senior administrators who need to become aware of the contributions computers can make to their organizations. Excellent facilities exist in Jordan for training activities in the use of video technology.

Tunisia

Microcomputers are already being used by the Office National de la Famille et de la Population (ONFP) for statistical work. Training in the

management and administrative uses of microcomputers is appropriate at this time, and excellent facilities exist in Tunis for this purpose. Video technology is already being used, and training enhancements would be appropriate.

The specific technical assistance recommendations resulting from the survey are:

1. RONCO should conduct a regional senior management level computer familiarization workshop.

2. RONCO should conduct a video technology component in a scheduled regional training activity.

3. RONCO should conduct training activities in computer applications for Ministry of Health personnel who will actually use computers in specific countries.

4. RONCO should conduct a Regional training activity for computer systems administrators.

5. RONCO should immediately increase its experience with management information systems (MIS).

INTRODUCTION

RONCO consultant Russell J. Dionne visited Egypt, England, France, Jordan, Morocco, and Tunisia from 9 September to 9 October 1986. The purpose of the trip was to conduct a survey of electronic technology uses and applications in order to obtain information necessary for the planning of a regional training workshop on the use of microcomputers and video technology in family planning training programs. The objectives of the trip were to determine:

1. the current access to microcomputers and video equipment of each family planning training institution;

2. the place of computers and video equipment in the priorities and plans of each organization;

3. the potential for computer and video use in each organization;

4. the most appropriate hardware and software for specific applications determined by the needs of institution;

5. the compatibility of existing hardware with desirable configurations;

6. the initial requirements for training the staff of specific organizations in the use of and support of electro)ic technology;

7. the in-country infrastructure for electronic technology uses.

Contact with representatives of family planning training organizations from seven (7) NENA countries at the Regional Training Needs Assessment Conference held in Tunis yielded data on the wide diversity of levels and range of experience and knowledge in the general area of electronic technologies. This data validated RONCO's decision to make a detailed electronic technology survey in each country before organizing a workshop on this topic so as to make the workshop meaningful to all participants.

BACKGROUND INFORMATION

Electronic technology applications have the potential to improve the ability of family planning training institutions to achieve their training objectives and enhance their managerial and administrative functions. Microcomputers can permit these institutions to expand their training capabilities, to manage and monitor data more efficiently, to administer programs more effectively, and to use a more comprehensive and precise data base in decision making. Microcomputers would facilitate improved training through more efficient and effective student records keeping and training program administration. Microcomputers would facilitate improved curriculum design, revision, and update. Microcomputers would improve the supervision of trainee performance in the field by use of an appropriate data base. In addition, microcomputers can permit the training institutions to cooperate more effectively with the Ministries of Health and service delivery organizations for whom they train family planning workers by use of computer data on both aspects of family planning activities.

Appropriate applications of television technology can also contribute to the success of training programs in ways not duplicated by any other means. Video is a powerful tool in the teaching of interpersonal and human relation skills which are essential to successful family planning service delivery. Video is an effective tool in documenting training activities. Video makes possible a rapid and cost-effective distribution of training and topical information in response to issues and needs which arise in family planning training and service delivery. Training organizations can make culturally appropriate and sensitive video tapes for a variety of purposes ranging from self-instruction or refresher courses to patient education. Consideration of electronic technology applications is an essential part of contemporary program development work, and their careful evaluation is, in fact, mandated in the PAC II contract.

During several project development visits conducted since October 1984 it became apparent to RONCO staff members that many organizations involved in RONCO's PAC II Family Planning Training Project have not yet had an opportunity to develop microcomputer competence or avail themselves of the potential benefits offered by this powerful and cost-effective tool. The same observations held true for video technology. Where electronic hardware exists, training in its use would be the first step in enabling the institutions to develop competence. Before devising electronic technology training plans, however, hard data rather than first impressions were necessary. The purpose of this trip, then, was to obtain such data.

The trip was a survey of PAC II family planning training institutions and was conducted in order to provide information necessary in order to to organize a regional training workshop on the use of computers and video in family planning training programs.

This survey trip was made in conjunction with RONCO's Regional Needs Assessment Conference held in Tunis from 1 through 6 September, 1986. Immediately before, as well as during the conference, RONCO received information which necessitated first a rescheduling of the original itinerary and then a restructuring of the survey into two separate trips: 1) survey work in Egypt, England, France, Jordan, Morocco, Tunisia; 2) survey work in Turkey and Yemen. These changes were necessary because key contact persons were not available as originally scheduled.

FINDINGS

EGYPT

Institutions involved in family planning training and service delivery visited in Egypt were:

Institute for Training and Research In Family Planning (ITRFP), Alexandria

Nursing Department, Ministry of Health, Cairo

Information and Documentation Center, MOH, Cairo

Rhoda Educational Technology Center, MOH, Cairo

Higher Institute of Nursing, University of Alexandria

High Institute of Public Health, Alexandria

Overall, the most important observations made during the visit to Egypt were that: 1) the usefulness of electronic technology applications is appreciated by the management of the institutions who expressed a general desire to acquire electronic equipment should funds become available to them; 2) the management of the institutions was prepared both to attend workshops and conferences designed to help them enter into the world of microcomputer-assisted management and to nominate key individuals within their institutions who may also benefit from such meetings; 3) the management of the institutions was prepared to send key staff for video communications training; 4) there is a conspicuous lack of electronic technology at their disposal; and 5) in the public sector institutions there would be problems in obtaining equipment either by themselves or through donors.

The Institute for Training and Research in Family Planning (ITRFP) in Alexandria has two video cameras acquired recently when a new building was added to the complex. While the persons designated to operate the cameras received basic training in the operation of the equipment, they have not received instruction in the use of video equipment in either training or video program production. The Dean of the Institute would like for one of her staff to receive production training. The ITRFP has no microcomputer capabilities. Once it was explained to her, the Dean was receptive to the idea of microcomputer use in the management and administration of her institution. She also mentioned a staff member whom she would like to have receive microcomputer training once it was possible for the institution to acquire the necessary hardware and software. Training in microcomputers before having the equipment in-house would not be an appropriate use of staff time in her estimation. [Note: RONCO was invited to attend the opening session of the first training session in ITRFP's new facility. Among the guests of honor was the U.S. Consul General's wife, Mrs. Patricia Hemley, who is herself a nurse-midwife.]

The Higher Institute of Nursing at the University of Alexandria presently has no computers, microcomputers, or video equipment. The one overhead projector is not readily available for use by trainers due to high demand or absence of projector bulbs. Even if equipment were made available to the Higher Institute of Nursing through a donor agency, obtaining university approval to accept such equipment would be a complicated and time-consuming process. While these findings appear negative, the individual interviewed was well aware of the potential benefits which would accrue to the training program, administration, and management of the Institute from the placement of electronic equipment in the Institute as well as from the arrangement for appropriate training.

The High Institute of Public Health in Alexandria does have access to the computer center at the School of Public Health (Texas Instruments hardware) which is staffed by an Assistant Professor of Electrical Engineering, four technicians, and three (3) data management experts (one Associate Professor and two Assistant Professors). This computation center is dedicated to statistical work (using Basic and Cobol), but the individual computers are few and not networked or set up for multi-tasking. Given that the center is dedicated to statistical research, and that the hardware is limited, additional equipment would have to be acquired before giving all staff access to the computers--which would be the ideal situation. If access to computer hardware were more widely available through the aquisition of additional microcomputers, there might be potential for microcomputer training for management and administrative purposes. This Institute also has U.S.A.I.D.-donated video equipment, but this equipment is incompatible with local equipment and power supply. As a consequence, the Institute's staff uses films and will not be open to video training and use until more appropriate equipment is acquired or the existing situation is remedied. Little

ment is acquired or the existing situation is remedied. Little use is made of the potential for public information courses given inappropriate films and the inability to produce video tapes which can be distributed and played outside of the High Institute of Public Health.

The Nursing Department of the Ministry of Health in Cairo does not have either microcomputers or video equipment. The General Director of the Department has declined an offer by the Information and Documentation Center (MOH) to provide one of her nurses with computer training because there was no equipment for a nurse so trained to use. This is not to say that computers would not or could not be used. The Department of Nursing has responsibilities for in-service training at the central and governorate levels, is responsible for the central distribution of nurses, for nursing services, for training at fifty-five (55) nursing schools, for curriculum evaluation, for the production of training materials, and for inspection of nursing programs. These responsibilities are not currently discharged to the satisfaction of the General Director because there is a critical shortage of staff. The acquisition of computers and staff trained in their use would alleviate the Department's immediate and long range needs. The Nursing department does have limited access to the Roda Educational Technology Training Center for training purposes. It is possible that one member of the Nursing Department staff could benefit from video training in that she would then be able to explain video training potentials to the Roda Center staff.

The Information and Documentation Center of the Egyptian Ministry of Health in Cairo operates ICL (Imperial Computers Limited) computers with Arabic keyboards (one DRS 20, nine terminals, and three ICL microcomputers using DRS Microsoft Basic V7.05). The Center is working with the MOH, ICL, and WHO on a variety of projects. These projects include data bases for MOH decision-makers: manpower; hospital units, beds, and equipment; budgets; donor agency information; the coding of diseases; statistics; departmental activities; and health legislation. The MOH specifies the programs it desires for its health and medical work, and the Center--in conjunction with universities--provides programmers, trained operators, and training (it is currently working with ICL on a nine-month high-level programming course for fifteen students (one-half from MOH, one-half from Cairo University Faculty of Engineering). Each year, the Center trains a number of people from within the MOH in computer applications and programming. Last year, five were trained, including one from the medical school faculty, a pharmacologist, a nutritionist, a statistician, and one from the budget department. This is certainly one in-country resource which could be tapped in the service of family planning activities.

The Roda Educational Technology Center has one Olivetti/AT&T 385 mainframe computer, one Arabdata 50 keyboard and terminal,

one AT&T and two Santec printers, and one Isoguard Uninterruptable Power Supply and Battery Backup. While ten staff members at the Center "are familiar" with computers, the fact that there is one terminal in the building for a mainframe is perhaps indicative of the level of use of this computer. There was no training program for computer use in effect, and computer activities were not the main focus of the Center. The same held true for video comminucation use. While the Center had Japanese-donated equipment (a studio with two National WV 3600E studio cameras, two National portable video cameras, and one video camera-microscope hook-up, monitoring equipment, editing equipment, and sound production equipment), the arrangement of equipment indicated that mostly static lecture or discussion programs were produced. Given the fact that the Roda Center has a clientele of 150 nursing schools, and produces mostly slides and printed material, it would appear that an opportunity exists tp assist the Center in developing its video use and production potential, particularly since it is also a training site for the Departent of Nursing in that Department's international training projects.

ENGLAND

Institutions involved in family planning training and service delivery visited in England were:

International Planned Parenthood Federation (IPPF)

The visit to the Arab World Region division of the IPPF was most informative, offering as it did a regional perspective and a donor perspective on family planning associations in many of the countries covered in the survey. The discussion at the IPPF consisted of a video portion and a microcomputer portion, each subdivided by countries. The following is a summary of the discussion.

Egypt

The Egyptian Family Planning Association does not have video communication capabilities.

Jordan

The Jordan FPA has no video capabilities, but it does have good relations with the government and should it aquire video communications capabilities its products could be used for campaigns in the field.

Morocco

Morocco's FPA has the only functioning video facilities in the region. Two important questions are: 1) How can video use be maximized? and 2) Can the Moroccan FPA produce materials for the region?

Somilia

Somilia's FPA is a young association, and is not yet ready for video use.

Sudan

In the Sudan, the FPA is interested in obtaining video equipment, and could use it because of a recognized need for a video component in its program.

Tunisia

In Tunisia, the government is doing the important work in family planning, and the FPA lacks the ambition or ability to use video communications as a part of its program. It could have an active program including the use of video communications. Such a program would have to be based upon research dealing with the economics of family planning and upon those areas of low family planning acceptance. The government of Tunisia is willing to work with the FPA whenever the FPA is prepared to work with it.

Yemen

Yemen's FPA was inactive at the time of the visit.

One caveat of concern to the IPPF Arab World Bureau is that all too often classical Arabic is used "snobbishly" [IPPF] in what few video productions exist. Given the importance of local, non-classical Arabic language use, distribution of what is currently available, (in Classical Arabic) seems pointless because there is little communication with the target population. This is an issue which should be addressed in any video training programs conducted in the region.

Microcomputers

The IPPF Arab World Bureau offered several observations on microcomputer potential and use in the region:

1.There is in the FPAs both a desire and a need to know about computers and their uses.

2.Computers can be used at the very basic level of office automation.

3.Computers would assist greatly in the budget process and the management process, providing important infor-

mation to all who need to know when they need to know it.

4.While computer-based communication links between the IPPF and country FPAs would be ideal, what is really desired by the IPPF is hard copy received in a timely manner--and this would be made possible by FPA computer use. Even more desirable, in the opinion of the IPPF, is that FPAs be able to link offices within countries, and that they be able to connect to government data bases.

5.Training questions include: 1)FPA management information systems in general and computer based MIS in particular (what data do managers use? what data can they use? what data should they use?) and 2) what sort of training is possible or beneficial without computers being available for FPA use?

6.The retention of trained staff is generally a problem for FPA's; retention of FPA staff members trained in computer use would be a part of the general problem. Perhaps in the not too distant future, computer training and hands-on knowledge will become a requirement for certain staff employees.

The IPPF Arab World Region division has itself recently obtained a Format 80 Arabic word processing package for its IBM PC, and uses the Symphony word processing and spreadsheet software.

IPPF observations on regional FPA microcomputer use are:

Bahrain

Bahrain has a computer, but it is a luxury there which gets little use.

Egypt

Cairo monitors 24 FPA branches, and it takes months for communication to occur between the branches and Cairo and among the branches. Computers could potentially rectify this major communication problem. Also, the Cairo FPA manages a $1 million budget for itself and its seven principal branches, and computerized budget management would be highly desirable.

Lebanon

The Lebanese FPA could make good use of computer technology in the analysis of its research, in the word processing of its training materials, and in the management of its basic health services program.

Morocco

The Moroccan FPA has computers, but because the one staff member who could use computers left the organization, the computer is not being used at this time.

Sudan

The Sudanese FPA is nearing the point at which a computer would be quite useful.

Tunisia

The Tunisian FPA needs to hire two key personnel in order to have a more active program, to handle data and word processing, and to take advantage of Mr. Mongi B'chir's computer plans and activities at the ONFP and his willingness to assist the FPA.

The concluding comment in the discussion with the IPPF was that it is more important to have something done quickly in specific countries rather than wait for a region-wide project with a long lead time and slow results.

FRANCE

Institution visited in France:

Informatica Corporation

A one-day visit was made to the Informatica Corporation in Paris to investigate the potential of its Minitel office communications system in meeting some of the computer based communication needs of family planning training organizations. Minitel is a low-cost method of accessing a computer data base for simple data entry and data retrieval functions which is also simple to learn and subsequently use. It is a potentially very useful and cost-effective tool which could supplement a computerization program in a family planning training institution. Not every staff member in such an institution has the time, inclination, or need to have a computer workstation. There is a need, however, for access to a data base either for information retrieval or for update of files. Minitel could provide such access at a very low cost per user. Not only is the hardware cost of a Minitel unit very low in comparison with computers or terminals, but it is not necessary to give extensive training to people who are to use it. In a matter of minutes, for example, a manager or department head could learn to use the system to obtain specific items of information (e.g., inventories of supplies, placement of personnel, patient records, budget figures, or the sending and receiving of messages). Since it is in the French language, the Informatica product may have a role to play in North Africa.

MOROCCO

Unfolding circumstances in Morocco have dictated revisions of the PAC II strategy for family planning training in that country. At the time of the consultant's visit to conduct the electronic technology survey, these strategy revisions were under intense discussion by the RONCO PAC II Project Director, the RONCO PAC II Evaluation Coordinator, and senior Moroccan Ministry of Health (MOH) officials concerned with family planning training and family planning training institutions. The evolving strategy for Morocco will impact upon the ways in which training and management could be enhanced by electronic technology applications. The PAC II Project Director, therefore, decided to postpone the electronic technology survey in Morocco until the future role of PAC II in that country has been clarified.

JORDAN

Institutions involved in family planning training and service delivery visited in Jordan were:

Primary Health Care Directorate, Ministry of Health (MOH)

Directorate of Planning, Training, and Research, MOH

Maternal/Child Health Care Center, Amman

Jordan College of Nursing

Directorate of Curricula and Audio-Visual Aids, Ministry of Education

Jordan Family Planning and Protection Association

The survey visit to Jordan was truly exploratory, both in the inherent nature of the survey and in the context of RONCO's recent initiation of PAC II work in this country. The survey visit to Jordan was concurrent with a visit there by RONCO's President and Regional Program Officer. Very much in mind as the survey began in Jordan was the enthusiasm expressed by the Jordanian participants at the Regional Needs Assessment Conference in Tunis for additional information on computer applications in family planning training and service delivery.

Specifically, the Jordanian participants had expressed a desire that a computer applications presentation be made to about seventy people from the Ministry of Health during the survey visit. While such a presentation could not in fact be given on such short notice, the expressed desire was kept in mind during the survey.

The initial meeting was with the head of the Primary Health Care Directorate, the division of the Ministry of Health which is not only responsible for maternal and child health and family planning activities, but also for public health nursing, health education, communicable disease control, environmental surveillance, health engineering, occupational health, and a number of additional aspects of primary public health. Not only the management and administration of maternal and child health centers and family planning activities would benefit significantly from computerization, but so also would each of the other functional sub-divisions of this directorate. Given what were the obvious computer needs and applications of this directorate, it was surprising to hear after opening statements that "there was no need in the directorate for computers or computer training because statistics were handled by another directorate." The head of the directorate added that he was prepared to entertain arguments and proposals in favor of computer use. Advantage was not taken of this offer at this time for it was preferable to visit other individuals and sites in order to obtain a better knowledge of the Jordanian MOH before returning to the Primary Health Care Directorate.

The second meeting was with the head of the Directorate of Planning, Training, and Research. There it was learned that this directorate, responsible for all MOH statistics, training, planning, and research had two microcomputers: a Wang and an Apple. Neither were being used because of a lack of staff trained in their use. The Jordanian Royal Medical Society provides the services of a computer-trained technician on a part-time, short-term basis. Such assistance, however, is quite inadequate for the needs of the the Directorate. The Director is aware of most of his immediate computational needs, but is less aware of the long range needs within both the Directorate itself and within the nation's hospitals and other MOH divisions. He is cognizant of the administrative needs which can be met efficiently with computerization (personnel information, budget information), the technical needs (biostatistics, inventory control), and hospital activities (admissions records are currently hand written and the data on them not analyzed). Of special interest to RONCO is the Director's realization that the Ministry of Health needs computer-based based information to evaluate the effectiveness of the Maternal/Child Health Center (including its level of utilization with reference to the birth rate per geographical population section). While he is aware of these needs and the fact that computerization would aid in such evaluation, he lacks information on the necessary steps in planning the computerization process, the necessary hardware and software components, and the

necessary staff requirements. He expressed a desire for one of his staff members to be sent to the U.S. for a year of programming training. He asked if RONCO could provide such training, and expressed an interest in other types of training (in-country and regional) which may fall within RONCO's programs. [His desire for U.S. training for a programmer was expressed before RONCO's training activities were described.] The Director would also be willing to participate in a senior level conference on computer applications in the health field since he realizes that he needs to know more than he does about the computerization process.

Two visits were made to the Maternal/Child Health Center (MCH) in Amman. During the first visit, the facilities were examined, the structure and content of service delivery programs were discussed with the individuals responsible for each aspect of the Center's work, patient recordkeeping procedures and workload statistics were examined, and family planning work and training requirements were discussed. The Amman Maternal/Child Health Center is also the national MCH training center, the principal institution of the Jordanian MOH MCH sub-directorate, and the prototype institution for other MCH centers. It is also the focal point for the new program in Jordan which seeks to integrate MCH and family planning service delivery. For all these reasons, the Amman MCH Center must be the key institution in RONCO's family planning training activities. It also should be the key institution for the introduction of electronic technology use and training, because such technology can contribute significantly to the successful integration of MCH and FP services. This conclusion was reached as a consequence of the first visit. The second visit was with the head of the MCH Center. His response to ideas and assumptions concerning electronic technology applications were closer to that of his superior [the head of the Primary Health Care Directorate] than those of his subordinates. He would have to be convinced of the utility of such technology in the realization of MCH objectives and MCH/FP integration. His subordinates, however, already are aware of the potential benefits of such technology, are ready to incorporate such technology into their work, asked questions about the possibilities inherent in such technology, and made suggestions as to what they would like to use. For example, when shown a CAI program on the nutritional needs of pregnant women, the MCH physician whose responsibilities include nutrition said that this was just the sort of thing needed by midwives when they take case histories (this particular software package retained the patient's answers to nutritional questions in the background and could be recalled so as to constitute part of a patient record). This second visit to the MCH Center reinforced earlier observations that careful and patient work will have to be undertaken with senior administrative staff within MOH and within the Primary Health Care Directorate before progress can be made in training for the use of electronic technology. The MCH Director, however, had a valid point when he observed that since MCH has no electronic technology, any applications training at this time would be useless. There is no doubt that eventually the Jordanian MOH will begin a

computerization process. RONCO training for senior personnel within the MOH in computer awareness could encourage the thinking of and planning for the future.

A visit was made to the Jordan College of Nursing (JCN). JCN is within the MOH, and trains both female and male nurses in a comprehensive program. The head of JCN has advanced degrees from London University, significant work experience in England, and has attended professional meetings in the United States. The JCN is quite open to and interested in the computerization of relevant aspects of its administration and management. JCN is also willing to have staff members trained in computer skills. JCN already has video equipment used in its training programs, and is quite willing to have its staff participate in training for video production. JCN trains 120 nurses a year in its regular programs, (basic and post-basic courses).

The JCN head arranged a meeting with the director and division heads at the Jordanian Ministry of Education (MOE), Directorate of Curriculua and Audio-Visual Aids. The visit to this Directorate was important for several reasons. It demonstrated that at least one Ministry in Jordan knew about and enthusiastically used electronic technology. The video production facility was first class with production and service technicians trained by the SONY Corporation in Japan. When these excellent but small-format production facilities were inadequate for certain purposes, the studios of Jordan Television were available to them. The computer facilities also were good, and there is a major program under way to increase training in computer use in Jordan's secondary schools. The training materials division is staffed by creative and competent people who are already producing materials for health education programs which are ideally suited to MCH and FP training (models, printed matter, slides, overheads, and posters). The video production facilities certainly are adequate for training sessions which incorporate video in the training process. These facilities already are being used by international projects in training, and because of its health education mandate, the Directorate is prepared to cooperate with RONCO in activities which benefit health care and service delivery in Jordan. This Directorate also would like to be represented in RONCO training activities because it is believed that its health care education program would be enhanced by the attendance of a staff member.

The Jordan Family Planning and Protection Association was visited. Plans already exist for the acquisition of a computer next year, and the President of the Association has requested that AID send a staff member to the U.S. for training [a request turned down as being premature]. Long-range plans call for the computerization of the five (5) main clinics which exist as well as the three (3) new clinics which are planned. The Association has a general idea as to how it can make use of computers. Assistance is required in refining these general, in the training

of staff, and in a more rapid acquisition of hardware and software.

A visit to the Population Officer at the USAID Mission was made. The Mission's basic position was that until family planning service delivery has reached a significantly higher level, and until equipment is obtained, training in electronic technology is premature.

Additional institutions and individuals could have been visited in Jordan had more time been available. The visit did provide, however, a solid idea of the needs, potentials, in-country resources, and problems in electronic technology applications.

TUNISIA

Institutions visited in Tunisia were:

Office National de la Famille et de la Population

L'Institut Regional des Sciences de L'Informatique

Centre National de L'Informatique

L'Ecole National des Sciences de L'Informatique

L'Institut Superieur de Gestion

Association Tunisienne du Planning Familial

Centre de Recherche et de Formation Pedagogique

The survey of electronic technology applications in Tunisia began with a visit to the USAID Mission and a long conversation with the Health, Nutrition, and Population Officer. Since RONCO already has substantial experience with the resources and needs of the principal family planning training institution, the Office National de la Famille et de la Population, the survey tended to focus upon Tunisian computer resources. The ONFP not only is aware of the fact that computers can contribute to its programs, but actually has a significant number of computers in place. The problem which exists is that ONFP management thinks solely in terms of statistical data, and not in terms of computer assisted management and administration. Since in Tunisia the computerization of government activities is mandated from the highest levels of government, and since the government has established very well-equipped and well-managed computer education and research institutions, the task in Tunisia became one of assessing these resources, analyzing the needs of the ONFP, and giving thought as to how to bring together the ONFP and the country's computer resources. Conversely, thought had to be given as to how the computer resources could best achieve their mandated objectives which are to assist both the public sector and private sector in the development of their computer capabilities. The USAID Mission is very interested in the development of Tunisian computer capabilities. It not only provides 500 scholarships in computer science and electrical engineering, but hopes that the students it helps train in this field as well as those who are trained locally have an opportunity to contribute to Tunisia's development. The Mission would like the enhancement of the nation's computer capabilities be applications-driven. The Mission

believes that the Ministry of Health is one division of government in which the time is most appropriate for the selection of applications designed both to further its work and to give opportunity and direction to in-country computer resources. The above considerations gave direction to the conduct of the survey in addition to the fundamental concern for family planning training applications.

The visit to the Office National de la Famille et de la Population (ONFP) yielded the following information: 1) The ONFP has 14 IBM AT and XT computers; 2) these computers are all being used for research [statistical] purposes (a use still in the development stage); 3) computer use is new to the ONFP, and there is a need for additional staff trained in computer use--both for research and for other purposes; 4) while there is a general idea of administrative computer uses, no one is trained for such use and there is no training program in place to deal with this situation; and 5) the ONFP has video equipment provided by USAID at a time when "buy American" was the guiding principle of procurement. This means that the video equipment at the ONFP is incompatible with the Tunisian power supply (voltage and cycles), standard playback equipment, and monitors. While step-down transformers can be used, there is no way of dealing with the cycle problem satisfactorily the staff is not interested in using the video equipment. In reference to computer use, an appropriate solution to the restricted application of this technology is a training program designed for personnel at the different levels of the ONFP. The objectives of this training would be to familiarize management and administrators with computer enhancement of their activities, and operational training for those who will use computers for non-research purposes.

The visit to L'Institut Regional des Sciences de L'Informatique et des Telecommunications (IRSIT) proved most interesting, but in ways only indirectly connected to family planning training. The Institute is a new outgrowth of the Centre National de L'Informatique [see below], designed to become not only a Tunisian high-level research and development facility, but also a transfer point between North American and European computer advances and computer research facilities in the Arabic speaking world. While the ultimate goals of IRSIT are ambitious and far-reaching, there are more immediate service objectives for Tunisian computer users. The precise nature of these services is still under consideration, but one possible area is the creation of French and Arabic software as well as the translation of software from English into these languages. It is in this matter of software translation that IRSIT and family planning training may be able to find common ground. Although IRSIT is just beginning its phased expansion (it has just moved into its second building, pending the construction of its permanent facility), it could become an important resource for the translation of software which may be relevant to RONCO computerization activities.

The Centre National de L'Informatique (CNI) was created to implement Tunisia's highest level policy decision to computerize government operations and to support the adaptation of computer technology in the private sector. The primary work of the CNI is with mainframe and mini-computers, for its own research purposes and for specific tasks assigned by the government (currently in administration and justice). CNI, however, plays a role in the national policy on the importation of hardware and software. It also plays an advisory role in hardware and software adaptation so as to help coordinate a national use system. The objective of this activity is to assist in the systematic, prioritized approach to expenditure on computer uses based upon individual group needs and national priorities. While the stated mission of CNI is comprehensive, it was not difficult to observe that the primary interests of the computer scientists and divisions within CNI were computational and statistical. Little attention seemed to be paid to the managerial and administrative uses of microcomputers, which is perhaps part of the reason why the applications of micros other than statistical research are weak in, for example, the Ministry of Health. While computer scientists are aware of the vast range of microcomputer applications, unless they work for companies or organizations whose business it is to exploit these potentials, they rather frequently devote little attention to them. This is not a uniquely Tunisian experience. While some computer training schools come under the province of CNI, it is clearly not a perceived responsibility to provide specific government organizations with the staff training necessary to make use of acquired hardware and software. A gap exists between national research, planning, and advice and the easy adaptation of computer technology for administrative and managerial purposes. It is this gap that the USAID Mission suggested RONCO explore, and the visit to CNI was useful in this exploration.

The L'Ecole National des Sciences de l'Informatique (Ministry of Education) is located a short walk from RONCO's Tunis office. The facilities are new and excellent, and its programs are imaginative and innovative. The director is a most impressive person, both in his abilities as a computer scientist and administrator and in his general perception of Tunisian circumstances. He also is interested personally in family planning, and is prepared to be both an ally and a resource in the development of family planning activities and computer capabilities. Of particular importance is the fact that this school has a separate training facility which is designed for specialized training for up to 20 persons and which would be made available to RONCO for specific computer use training activities. Microcomputers from a variety of manufacturers are owned by the school, which means that participants from throughout the region could be trained on whatever equipment is located at their home institution. In addition to the granting of degreees in computer science and in computer engineering, the school offers training in hardware and software applications for microcomputer use in medium-sized office situations and conducts seminars for computer users (basic and advanced). The school works with international groups, and has special interests in regional cooperation--particularly with

the Gulf States and sub-Saharan Africa. For this reason, Arabic language work and software development is part of the school's environment. The school is definitely a potential RONCO regional resource.

Another potential RONCO resource is L'Institut Superieur de Gestion (ISG). This Institute, another sub-section of CNI, is focused upon business and management applications. The natural language of instruction and programming is French, and the school has only one computer with Arabic capabilities. The Institute's primary product is computer scientists, trained in a four-year post-baccalaureat program. An executive training program exists, but is conducted only periodically. The same is true of a 48-hour computer literacy program which gives instruction in Basic and Pascal programming languages as well as software training (Wordstar, Lotus 1-2-3, and similar popular products). Of particular interest to RONCO is the fact that the Institute has a working relationship with the ONFP. As a part of their degree requirements, fourth-year students must do a three-to-five month project in an office. One student did his project at the ONFP, and the Institute's director said that the ONFP was willing to accept more of the Institute's interns (I did not have an opportunity to discuss this with anyone at the ONFP). The Institut also has discussed with the ONFP collaboration on a World Health Organization project, but nothing yet has come of these discussions. A dialogue, however, exists between the Institute and the ONFP. The Institut's director is a man with wide interests in computer applications. Medical applications are included in these interests. Other students have worked with hospitals in the computerized coding of diseases. The Institute has worked with pharmaceutical inventories, and the director would like to have his graduates work on health care and patient records. The director's attitudes towards computers and computer use is interesting. He considers the general and popular idea of the computer as fast calculation devices for engineers unfortunate. He thinks that this is the least interesting aspect of computer applications, and believes that Tunisia needs to emphasize at this time the more prosaic uses of the microcomputer. For example, he thinks that at this time there is an ill-conceived idea of computer use in business. While accounting and inventory uses are beneficial, he believes that the computer as word processor would benefit Tunisian offices and businesses most, with data entry and retrieval a close second. His problem, apparently, is in convincing office and business managers of this. Since he cannot go to them (although the Institut does advertise its short courses in the newspapers), and they do not come to him, the matter rests. For this reason, he would be an eager collaborator with RONCO, and was already aware of RONCO's existence because of a brief visit by Alice Morton.

The situation at the Association Tunisienne du Planning Familial is one in which there are no computers and no video equipment. While the degree of activity of this Association is limited, text processing and budget management would be enhanced

by computer use should upper management choose to make the organization more active and convince a donor agency that electronic technology would in fact be put to good use.

The visit to the Centre de Recherche et de Formation Pedagogique (Centre National Pedagogique, Ministere de la Sante) was brief due to the director's limited amount of time before an international flight. His organization has two video technicians and no computers. He considers the video technicians well-trained, but would welcome enhanced training. With reference to microcomputers, he is in unfamiliar territory--both as to the range of applications and as to hardware and software choices. He said that the technology moves quickly and that because of this choices are difficult. This may indicate that either he does not know where to obtain advice (his office is approximately one mile from CNI) or that there are no funds to purchase equipment (or a combination of these two factors). An impression obtained during the visit, however, is that the director is interested in electronic technology enhancements to his work were he to have information and funds. The director's perceived lack of information highlights the problem of communication in Tunisia's computerization program.

CONCLUSIONS AND RECOMMENDATIONS

The findings of the survey lead to the following conclusions:

1. It is appropriate to plan and schedule electronic technology applications training in the immediate future.

While the level of microcomputer familiarity and use varies throughout the region, a concensus exists that microcomputers could be useful in the management and administration of family planning training activities if appropriate training were available. For the managers of institutions in which computers are already placed, training would enhance equipment use; for managers of institutions without computer capabilities, training would make them aware of the potential contributions of computers to their organizations.

Video technology use is both more understood and equipment more readily available. Training in effective video techniques is a perceived need.

2. Microcomputer and video training sessions should be separate activities.

As the electronic technology applications project was originally conceived, the initial training activity based upon the survey was to have been a ten (10) day workshop on microcomputer and video applications. Survey findings, information obtained at the Tunis Regional Training Needs Conference, further consideration of the objectives of the training activity, hardware and software requirements all suggest that microcomputer training activities should be separate from video training activities:

a. Those individuals in need of training in microcomputer uses are not necessarily the same people who would benefit from video training.

b. The type and duration of microcomputer training activities are quite different from those required by video traiing.

c. The physical and hardware requirements for training in the two types of technologies are quite different, and the facilities needed for

computer applications training are quite different from those required for video training.

d. The training skills which can be enhanced by use of video technology are quite different from those which are enhanced by computer training. At the basic level of training which is needed, it would be inappropriate and inefficient to combine the two types of training activities.

3. RONCO should encourage microcomputer use in the management and administration of family planning training institutions.

Precise information on trainees (performance and subsequent employment), inadequate budgetary information, inadequate evaluation data, inadequate projection and planning capabilities, and inadequate text processing capabilities (correspondance, files, training materials) are general categories of problems which computers could help solve. Management should be encouraged not only to think about such problems and the data and capabilities needed to solve them, but should also be encouraged to think about computer applications which could provide management information in a timely fashion.

4. Microcomputer training activities should be applications-driven.

Computers are generally associated with their computational capabilities, which frequently means that statistical manipulations are the only ones managers think of. Statistical applications also seem to be the primary focus of international technical assistance in computer use. In meeting the needs of family planning training organizations, microcomputer training activities should focus upon those applications most useful in the management and administration of these organizations. An operational approach should be adopted which will demonstrate what computers can do, how computer capabilities can benefit both individuals and organizations, how the best use can be made of computers, and how computers can function dynamically.

5. Microcomputer training activities should address three levels of participant needs:

a. management-level participants who would like to incorporate computer technology into their organiza-

tions but who need assistance in obtaining adequate knowledge of applications, hardware, and software so as to make plans and decisions

b. management-level participants who are not aware of the potential of computer applications to the management and administration of their organizations.

c. key staff members who use computers and who are responsible for computer operations and support.

6.Microcomputer applications presentations should be incorporated into management training activities.

Often it is senior-level managers who are not aware of the non-statistical applications of computers. In the general context of management training, therefore, is an opportunity to demonstrate how computers can help provide timely data for management decisions. Such demonstrations would result not only in the familiarization and sensitizaton of managers to computer capabilities, but could also instruct them in the types of data they can or should use in the conduct of their duties. Microcomputer applications presentatons, where feasible, could enhance management training activities.

7.Video training activities should be incorporated into other training activities.

The majority of persons responsible for the management and conduct of family planning training activities are not only familiar with video technology but also have had some experience in its use for training purposes. The levels of skills and experience in video applications for training is varied. The basic skills, however, are simple to learn. The most appropriate, beneficial, and cost-effective venue for video skills training would be in actual training sessions rather than in a separate training activity. Since familiarity with video technology exists, hands-on experience in a normal training activity would provide the most effective context and content for enhancing video skills for training purposes.

8.Video marketing potential for use of family planning services should be incorporated into management workshops.

Each country in the region differs in its approach to the marketing of family planning services. In those countries in which there is a public marketing of these services, video presentations to select audiences may be appropriate. In Tunisia, for example, the Ministry of Culture and Youth has a network of youth clubs throughout the country. Each club has video playback equipment. The membership in these clubs may be an appropriate target for family planning messages. If the ONFP could come to some agreement with the Ministry of Culture and Youth in this matter, and if it could produce family planning messages on video, the ONFP could enhance its work through appropriate applications of this technology. The idea of using video in this way should be presented to management-level personnel, and the context of management workshops could be a most cost-effective and influential opportunity for presenting the idea.

9.Video production training should come only after basic use in training is well established.

Video productions, the hardware and facilities needed for production, the staff needed to script, budget, and edit, and the end use of video productions are all of an order of magnitude greater than basic use of video for training purposes. Any training in video production, therefore, should come only after basic video use in training is well established and the training institution is prepared to make use of the productions.

10. Training in basic video technology applications can be effective at both the regional and in-country level, provided that it occurs in the context of other training activities. Video production training can be and should be conducted at the regional level. Jordan's Ministry of Education has the best facilities identified so far for this purpose.

11. Training in microcomputer applications must be conducted in facilities designed for this purpose, and would therefore be appropriate as a regional activity. Tunisia's Ecole Nationale des Sciences de L'Informatique has the best facilities identified so far for this purpose.

12.A regional workshop on computer applications for senior management would be an appropriate RONCO electronic technology training activity.

Senior management of family planning training in-

stitutions, of institutions providing training in maternal-child health care service delivery, and government health officials could all benefit from a workshop in which they would become familiar with computer uses. Such a workshop would provide an opportunity for senior staff to become familiar with the various uses of computers, and could be a stimulous to their thinking about management data uses which could benefit the conduct of their organizations. More importantly, they could become sufficiently experienced and sensitized with hands-on experience so as to be able to state precisely what they would want their systems administrators and programmers to do for them in their home institutions.

A regional workshop would serve several purposes. It would generate an awareness of computer applications among those who at present have none. It would provide information and experience to those who would like to enhance their organization's computer capabilities. It would encourage all participants to consider the computerization of their organizations or the enhancement of existing computer use, and this could in turn increase the effectiveness of the activities of their organizations and make possible the management of expanded service delivery activities.

13.RONCO should take full advantage of Tunisia's current computer capabilities.

Of the countries so far surveyed, Tunisia has the most developed use of computers in family planning training institutions. Tunisia also has the strongest computer infrastructure and resources available to the Ministry of Health and the ONFP. Success in in-country computer applications training activities could come comparatively easily.

14. RONCO should continue to explore possibilities in Jordan.

Although the Jordanian Ministry of Health, Maternal-Child Health Care Center, the Jordan College of Nursing, and the Jordan Family Planning and Protection Association have no current computer capabilities, and although there is a general lack of knowledge about computers at high levels within the Ministry of Health, there are still significant long range potential in Jordan. The program of integrating family planning service delivery with maternal-child health care centers is just beginning. Given its formative stage,

given the economic resources in Jordan, given the high level of computer use and support in Amman, and given the desire and imagination of junior staff, computer applications can contribute to the rapid building of effective family planning service delivery systems. A rapid growth in this area would create training opportunities for RONCO, both in service delivery training as well as in electronic technology applications training.

15. ITRFP in Alexandria should be encouraged to enhance its video capabilities and assisted in the acquisition of a computer.

The ITRFP has management which is open to the use of electronic technology, and has already provided basic video training for its staff. The Dean would like to make use of computer-based management information. Given the potential influence of the ITRFP upon Egyptian Family Planning Associations, the introduction of computers and sophisticated video techniques at this family planning training institution could have wide effects.

17. Morocco should be revisited so as to conduct the full survey.

While the appropriate Ministry of Health officials were unable to be interviewed for purposes of the survey, RONCO has knowledge based upon USAID reports, conversations at the USAID Mission in Rabat, and other sources of information that electronic technology hardware exists to a limited extent in institutions responsible for family planning training. Morocco has a developed infrastructure for microcomputers, as is evidenced by the two computer magazines published in Casablanca. A video technology infrastructure also exists. There is interest in the technology within the Ministry of Health, the Ministry already possesses some equipment, and the Moroccan Family Planning Association has a computer. Because of these factors, and in the context of RONCO's commmitment to provide training in electronic technology where appropriate in the Near East/North Africa region, plans for such training activities should include Morocco and in order to do this the electronic technology applications survey should be rescheduled.

In view of the above conclusions, the following specific technical assistance recommendations are offered for RONCO's consideration:

1) RONCO should conduct a Regional senior management level computer familiarization workshop. The objective of this workshop, a training activity under the electronic technology applications sub-project, would be:

a) to examine the various components of an ideal management information system (MIS) suitable for family planning training and service delivery institutions;

b) to familiarize participants with the various ways in which computers can play a key role in MIS;

c) to give participants the opportunity to use microcomputers to enter, retrieve, and manipulate data;

d) to give participants an insight into what they can expect computer MIS personnel to provide for them;

e) to obtain information information on the specific computer training needs in each Ministry of Health represented at the workshop.

2) RONCO should conduct a video technology component in a scheduled Regional training activity (perhaps at the IUD workshop scheduled in Turkey in early 1987). The objective of this component, provided for in the electronic technology applications sub-project, is to give participants the opportunity to use video equipment in a training activity.

3) RONCO should conduct training activities in computer applications for Ministry of Health personnel who will actually use computers in specific countries. These activities will use in-country resources as much as possible so as to foster in-country working relatinships. This would be a part of a new project.

4) RONCO should conduct a Regional training activity

for computer systems administrators. This would enable designated individuals to develop the skills necessary for them to act as system administrators for the software selected for use by their organizations.

5) RONCO should consider the possibility of organizing a Regional video production skills workshop for family planning personnel responsible for the production of marketing materials.

6) RONCO should immediately increase its experience with management information systems (MIS).

a) RONCO has gained valuable experience in the development of a networked, multi-tasking and multi-user microcomputer system. RONCO has also gained valuable experience in MIS with the development of its data base management system for evaluation activities. RONCO should now undertake to increase of its experience in MIS so as to be able to provide enhanced capabilities in this aspect of microcomputer applications to meet the needs of family planning training and service delivery institutions.

b) Microcomputer software is evolving to ever greater levels of sophistication, and this development will accelerate rapidly with the introduction of the 80386 chip designed for networking. RONCO should keep current with hardware and software developments in MIS, in networking, in multi-user and multi-tasking systems, and should continue to explore computer aided instruction (CAI) materials which may contribute to family planning training and service delivery.

APPENDIX A

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