CD-ROM FOR AGRICULTURAL RESEARCHERS IN EGYPT: THE CANADA-EGYPT-MCGILL AGRICULTURAL RESPONSE PROGRAM (CEMARP)

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As part of an ongoing aid project sponsored by the Canadian government, I spent three weeks in December 1991 training Egyptian agricultural researchers to use the Silver Platter CD-ROM information retrieval system. Under contract with the Canadian International Development Agency (CIDA), McGill University is the executing agency for an aid program which emphasizes the transfer of critical skills to agricultural researchers. These skills, such as the technique of plant tissue culture, are expected to have a major and immediate payback in terms of increasing the productivity of researchers. The program has been judged a success, and the Canada-Egypt-McGill Agricultural Response Program (CEMARP) is now in its third phase with a budget of 15 million dollars. This paper will discuss the CEMARP project for which I was consultant within the context of the CEMARP approach to development and the appropriateness of CD-ROM technology in developing countries.[1]

Agriculture in Egypt is of vital importance in a country with a population of 56 million and a growth rate of 2.4% or more per year; about one million people are added to the population every eight months.[2] Although there are already high levels of crop production in Egypt, there is great potential for increasing production on existing arable land. One major factor inhibiting the realization of this potential has been the lack of development and use of new, improved technology. Egyptian authorities are placing great importance on upgrading research and extension work in order to improve agricultural methods, and to increase food production for the benefit of all Egyptians.[3]

CEMARP was started in the summer of 1986 with an initial funding of 5 million dollars by CIDA with the idea of creating a big impact through small projects in response to the well-defined needs of the Egyptian Ministry of Agriculture and Land Reclamation.[3] In addition to its intervention through timely and efficient implementation of small projects, CEMARP's involvement has been conditional on Canadian capabilities to provide the needed resources.

CEMARP has concentrated its resources in five important areas:

- "development of human resources through training of Egyptian scientists and specialists at home and abroad;
- strengthening institutions through physical resources such as equipment, materials, spare parts, and research instruments;
- transfer of technology through short-term consultancies, collaborative activities, twinning between institutions, and exchange of scientists, researchers, and technicians;
- improvement in production in selected farming activities and on pilot farms; and
- enhancing the role of women and promoting their participation in all activities related to the development of agriculture."[3]

CEMARP has supported a number of library and information projects in Egypt. An early project assisted the Egyptian Documentation and Information Centre for Agriculture (EDICA). EDICA is responsible for indexing agricultural literature produced in Egypt and also provides information retrieval services to researchers and policy makers in Egypt. EDICA is the national input centre for AGRIS and for the Current Agricultural Research Information System (CARIS) of developing countries. The Centre has had good facilities for data collection, retrieval and processing, but was dependent on printing facilities in Vienna, Austria. The two laser printers, related accessories and software that CEMARP supplied had a major impact on the quality and speed with which EDICA's printed products were produced.[4,5]

The resources allocated to agricultural libraries in Egypt are severely limited. Furthermore, the library may be regarded as a means of providing employment for the graduates of an agricultural faculty. This has been the case in the library of the College of Agriculture of Alexandria University, where until recently agriculture graduates were hired without receiving any training in library science.[6]

Under contract with the American University in Cairo, CEMARP initiated library training programs for the library staff of the College of Agriculture of Cairo University in December 1990 and for the College of Agriculture of Alexandria University in January 1991. These training programs might be described as a "crash course" in modern librarianship consisting of 48 hours in the case of Cairo University and 36 hours for Alexandria University.[7,8]

CEMARP has also provided the libraries of these two universities with equipment and materials such as computers, copiers, books and subscriptions to periodicals. As part of a larger project for which I served as consultant, these libraries also acquired access to agricultural databases on CD-ROM.

In August 1991 the Director of CEMARP invited me to serve as consultant for CEMARP's initial program to provide CD-ROM service to selected agricultural research units in Cairo and Alexandria. During the fall of 1991 I advised CEMARP on selection of equipment, databases and search aid tools. An intensive training program was developed in consultation with CEMARP staff and an extensive set of course notes was prepared for the participants.[9]

The facilities available to me within the Management Information Systems Training Centre in CEMARP's Cairo offices were excellent. Six terminals were available for use by up to twelve participants. Each terminal had access to four databases through a LAN. In addition, the instructor's terminal had an override capability that enabled the instructor to transmit to all of the participants' terminals. An overhead projector allowed the use of transparencies as well as projection from the instructor's terminal. These facilities permitted flexibility in method of presentation with a minimum of technical problems.[9]

Each participant received a copy of the prepared course manual and shared a terminal with one other person. Each of five groups spent four half-days learning the Silver Platter command system, as well as the unique features of four agricultural/biological databases: AGRICOLA, AGRIS, BIOLOGICAL ABSTRACTS and CAB. The training program was designed to introduce all systems commands over the first three days, as well as familiarizing the class with one of four databases each day. On the fourth and last day, the participants were able to (with the exception of the first and last groups) print out references at a printer on a topic of their choice. Basic commands were introduced the first day and an hour or more of practice time was available on that day and each succeeding day.[9] Relevant search aids such as database manuals, thesauri, and serial lists for the available databases were available in the classroom and participants were encouraged to use them in formulating search strategy.

The participants selected by CEMARP staff were mainly staff or faculty employed by Cairo, Alexandria, Al-Azhar and Ain Shams universities and by various research institutes of the Ministry of Agriculture, and CEMARP staff. Some library staff members from Cairo University also attended. Most were quite experienced in using microcomputers and many had previously taken courses at the Management Information Systems Training Centre. The greatest limitation for many of the participants was their difficulty in understanding spoken English.[9] In fact, an extra group could have been instructed had there been enough candidates with adequate English to participate.

Each group was asked to evaluate the course on the last day of instruction. The resulting feedback was useful in altering some aspects of my instruction. After the first week, I developed exercises designed to strengthen their skills in formulating search strategy by requiring greater use of database search guides and thesauri while still allowing adequate time for independent exploration of the databases. The behaviour of some participants proved the value of the override capability on the instructor's terminal. Some participants in the initial groups tried to exploit practice time to run their own searches. They saw it as an opportunity to download or print as many references in their research area as possible, and they were disappointed when access to a printer or disk drive was restricted. At least two written comments in the course evaluations expressed doubt (not entirely without reason) that access to a CD-ROM would actually be possible after the training session. The fear of viruses is such that CEMARP does not allow downloading from its facilities. One printer was made available for the entire class on the last day of the course.

The course evaluations revealed an overall high level of satisfaction with the instruction received. While most thought the length of the workshop was appropriate, twenty-five per cent did not think it was long enough. There were written and verbal comments indicating many participants would have liked more extensive notes and graphic illustrations in the course notes. The expressed need for more detailed and illustrative material may have in part been due to language difficulties and to the fact that they did not have access to printers with which to do screen prints. This should not be a long-term problem however, since copies of the SPIRS User's Manual are available in each of the recipient institutions.

One written comment suggested instructional materials in Arabic would be useful.[9] In general, I was impressed by the enthusiasm of the participants. A few suffered from severe difficulties in understanding spoken English.

In addition to classroom instruction, I joined CEMARP staff on four site visits during which I demonstrated the use of the CD-ROM retrieval system. The four sites at which CD-ROM workstations, databases and search aids were installed and available for use as of January 1, 1992 were: the library of the Faculty of Agriculture of Cairo University; the Soil and Water Research Institute, and the Animal Production Research Institute of the Ministry of Agriculture and Land Reclamation in Cairo; and the library of the Faculty of Agriculture of Alexandria University. The attendance at these demonstrations left little doubt as to the eagerness with which researchers viewed the service.[9]

The Dean of Agriculture at Cairo University has described the acquisition of CD-ROM service and other library improvements funded by CEMARP as "a quantum leap in the quality and accessibility for research reference. Our students, researchers and teaching staff can catch up quickly with the rest of the world. It is a milestone in the modernization of our institution."[10] A total of 49 participants completed the initial training sessions in December 1991. Since that date, CEMARP staff in Cairo have trained large numbers of researchers to use CD-ROM. Two more CD-ROM workstations have since been established in the Field Crops Research Institute and the Veterinary Service Research Institute of the Ministry of Agriculture and Land Reclamation. Additional CD-ROM databases have been provided: Water Resources Abstracts to the Soil and Water Research Institute, and Biotechnological Abstracts to the Animal Health Research Institute and the Veterinary Service Research Institute. At present, CEMARP intends to support its CD-ROM program until 1996.[9,2]

CD-ROM has been considered especially useful to developing countries because it:

- "eliminates the need for costly/difficult telecommunication links
- can survive/operate even under difficult conditions, such as heat, humidity, dust and unstable power supply
- can be portable or battery-operated
- uses relatively 'simple' information technology - a basic personal computer will perform many CD-ROM applications
- has a relatively low capital cost for the equipment."[11]

Unfortunately, the introduction of CD-ROM in developing countries has the potential for intensifying current problems in document delivery. It has been noted that Egypt lacks a "reasonably priced document delivery service", resulting in a substantial dependence upon foreign supported libraries in Cairo, such as the British Council Library or the American Center Library. In the Egyptian context, the cost of foreign-supplied documents may be relatively high and the delivery time may be several weeks.[12]

However, some developing countries may be more fortunate in their document delivery links with foreign libraries. One veterinary library in Zimbabwe reports that interlibrary loan requests generated from CD-ROM literature searches are filled by post within one week from the Veterinary Library of the University of Pretoria.[13]

My own observations and discussions confirm that the material resources of the agricultural libraries in Egypt are very limited. Too often library materials are dispersed in departmental collections which are not part of the main faculty library. Consequently, researchers must rely on their own personal networks to obtain needed documents rather than using the library of their own institution. CD-ROM will almost certainly widen the gap between the information that agricultural researchers in Egypt identify as relevant and what is easily available locally. Given current economic conditions in Egypt, the maintenance of CD-ROM service to the six institutions supported by CEMARP may be in question once CEMARP's support is terminated. Similarly, unless more financial support is given to collecting scientific and technical literature in Egypt, researchers will remain heavily dependent on relatively expensive, foreign sources of supply.

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